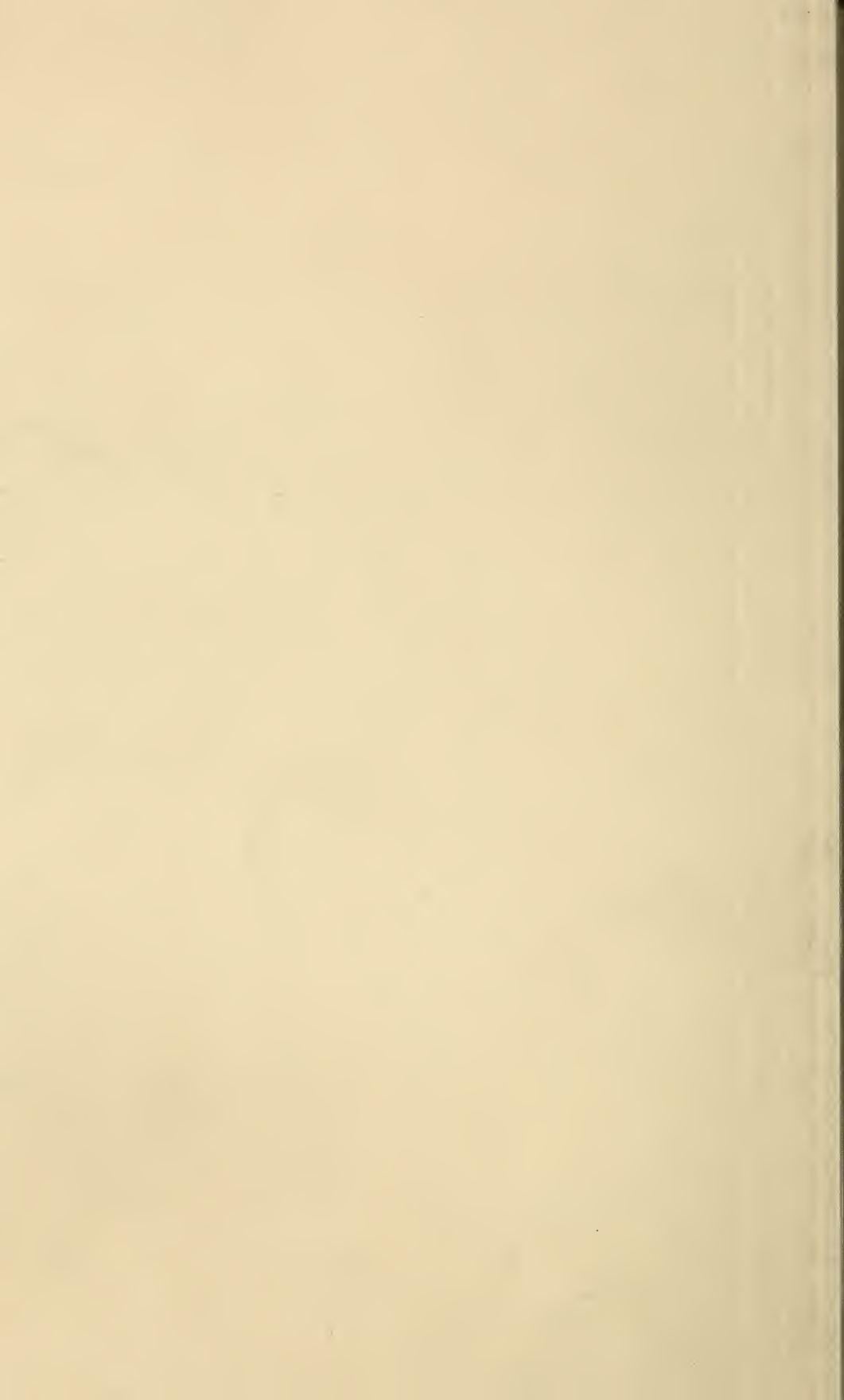


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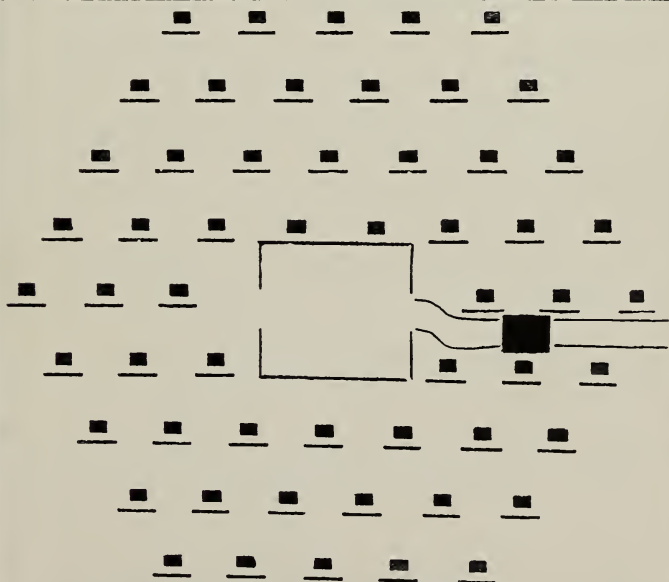
Cleanings IN Bee Culture.

1873

Or how to Realize the Most Money with the Smallest Expenditure of Capital
and Labor in the Care of Bees, Rationally Considered.

PUBLISHED MONTHLY.

VOL. I. MEDINA, O., APRIL 1, 1873. No. 4



ARRANGEMENT OF THE APIARY.

(We should add Designed and Engraved by "Novice," but "P. G." says it wasn't engraved for
"he did it with a saw." P. S.—*Novice* are Novice's last bobby.)

Some of our subscribers may find it convenient to club their magazine orders, and we shall be glad to handle such for them. Below we give a few of our special clubbing offers. If you are especially interested in a clubbing rate on some other magazine not mentioned, write for price.

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The A. I. Root Company, Medina, Ohio

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FEBRUARY 1, 1913

NO 3

Editorial

THE MEETING OF FOUL-BROOD INSPECTORS.

THE second meeting of the foul-brood inspectors of the various States was held in Cleveland, Dec. 31, in conjunction with the meeting of the American Association for the Advancement of Science and the affiliated societies, for the purpose of forming a permanent organization. Steps were taken to perfect such an organization, the same to be a part of the larger body already mentioned. Full particulars will be given later by the Secretary, Dr. E. F. Phillips.

NO ADULTERATION FOUND IN CONNECTICUT.

IT is a significant fact that, according to the report of the Connecticut Agricultural Experiment Station (Part 2 of the Annual Report of 1912), no adulteration was found in twenty-six samples of bottled honey examined. The following is the first paragraph of the summary:

While in a few cases certain tests indicate the presence of a small amount of glucose, and in two instances the percentage of ash exceeds the standard, we do not feel justified in condemning any sample as adulterated or otherwise illegal. There are wide variations in quality, but all the samples appear to be genuine honeys of varying origins.

A FOUL-BROOD INSPECTOR AND A LECTURER.

MR. FRANK C. PELLETT, of Atlantic City, Ia., State Foul-brood Inspector, is also a lecturer of some note. He is employed by two lecture bureaus. Some of his principal themes are as follows: Little Giants; Economy of Nature in the Plan of Eden; Our Backdoor Neighbors; Passing of the Red Man; Bees; Religion of the Indians; Lives of the Four-footed; Short Course in Nature Study. This last consists of a series of lectures that are both popular and interesting. Mr. Pellet is a naturalist as well as a bee-keeper, and Iowa was fortunate in securing a man of that sort for inspector.

WHY HONEY HAD A GREATER BUYING VALUE FORTY YEARS AGO.

ELSEWHERE in this issue two of our correspondents allude to the fact that honey sold for a much higher price years ago, and that it really was higher in price compared to other articles. Mr. Doolittle suggests

that this can hardly be accounted for by over-production, which is probably true, since the demand also has increased enormously. But it occurs to us that granulated sugar, maple syrup, glucose (or the so-called corn syrup), canned vegetables, and fruits have all combined to furnish a variety and very often a substitute for honey. Moreover, transportation facilities have improved so greatly in forty years that fruits of all kinds are much more widely produced and distributed than in the olden days; so that honey, the purest and most healthful sweet, has really been reduced in price by the competition of other foods.

It is also true that no organization of producers has yet done any extensive advertising along the line of popularizing the use of honey.

A. I. ROOT'S FIRST EXPERIENCE IN BRIMSTONING A BOX HIVE; HOW IT NEARLY COST HIM HIS LIFE.

In this issue, A. I. Root, in a reminiscent way, tells how he first began keeping bees; and among other things he writes about a box hive that was to be brimstoned in the dead of winter; how his childish eagerness was such that he went out into the cold air when he was already sick with a cold, came down with pneumonia, and for days hovered between life and death. Had he been taken away, some history would never have been written; there never would have been a Home of the Honeybees, no GLEANINGS IN BEE CULTURE at Medina, and possibly the beekeeping industry might not have been advanced to its present status. The doctors did not save him; but his mother (as the neighbors said) "would not let him die."

NOVICE'S GLEANINGS IN BEE CULTURE.

OUR cover picture for this issue is a copy of the first engraving that ever appeared on the cover of GLEANINGS; and, as will be noticed from the inscription underneath, it was "Designed and engraved by Novice" (A. I. Root), and with a saw.

Some idea of the change that has taken place in forty years is gained from the fact

that GLEANINGS was first issued as a quarterly of only eight pages, 6 x 9½. It was immediately changed to a monthly of fifteen pages, the last column of which was reserved for advertisements, there being seven in all.

Among the names of beekeepers seen in this first volume of GLEANINGS we find the following who are known to the beekeepers of to-day: C. C. Miller, G. M. Doolittle, E. Kretchmer, C. P. Dadant.

Is it not a significant fact that all four of these writers have made contributions for this special Old Timers' number after a lapse of forty years? We are proud of the fact that A. I. Root, the founder, while no longer the managing editor, is still, nevertheless, editor-in-chief.

WINTERING DOUBLE-WALLED HIVES IN THE CELLAR.

MOST of our bees we winter out of doors. This was the case unfortunately last winter; but there was one yard of Carniolans, the individual colonies of which were not very strong, as they had been made up of nuclei comparatively late in the season. We had more fears of this yard than of any other that we had. When the severely cold weather came on, we feared that they would not winter, and so we brought them home and put them in the cellar—double-walled hives and all. When we set them out in the spring they were the best and strongest apiary we had; and if we had put our other bees into the cellar we should not have been obliged to buy heavily in the spring; for while our losses outdoors rarely exceed 5 per cent, last winter they went up to over ten times that. Hereafter, when a severely cold winter comes on, we shall put our bees all in the cellar, and set them out early the following spring, or as soon as severely cold weather lets up.

MOVING BEE-YARDS IN THE HEIGHT OF WINTER WHEN SNOW IS ON THE GROUND; SNOW MORE EFFECTIVE THAN SMOKE FOR QUIETING BEES IN COLD WEATHER.

AS mentioned in our last issue, we have been moving some of our apiaries, located in exposed regions where the windsweep was too strong for best results in wintering, to our mammoth bee-cellar made of concrete and brick. It has formerly been considered that it was not wise to move bees in midwinter, as the disturbance would cause them to become active, consume their stores, and clog their intestines, with the result that dysentery would set in before spring. Our experience last winter and this leads

us to believe that this is not so. If the weather is cold enough, the bees will not be greatly disturbed. We prefer a temperature anywhere from 10 to 25 degrees above zero. There should be at least fair sleighing in order to get the best results. When possible the time for moving should be selected right after a light dry snowfall, for reasons that will be presently explained.

If the roads are uneven, and show bare spots, a common old-fashioned sled with long runners is better than a pair of bobs. Whichever is used should have a large platform such as a hayrack, on which the hives may be loaded. The sled is to be pushed clear out into the middle of the apiary, and the team detached and blanketed. The hives are then loaded one by one. As many as sixty or seventy colonies can be carried on a sled. As it is low it is easy to load the bees. The entrances should be so arranged that the apiarist who accompanies the driver can easily get at them. The bottom-boards should be most securely fastened if they are of the loose type. Sometimes the sled will slip sideways, causing a sliding jolt that may dislodge one or more hives from the bottom unless they are well fastened. If they are piled up two tiers high they should be securely roped to the platform and hayrack.

A little way back we stated that the time set for moving should be right after a light snow. The purpose of this is to provide an easy and effective means for closing the entrances of the hives. A wet or soggy snow is too much of a good thing. If it is frozen hard, and breaks up into lumps, it does not make a good entrance-closer; but if it is light and fluffy, it can be picked by handfuls and thrown over the entrances of the hives just before loading. When all are on, the entrances should be examined again, and more snow used if any bees seem to be getting out. A pile or two of light snow should then be put on the sled, to be used in case of emergencies. In cold weather it is far more effective than smoke, and makes an excellent entrance-closer. The bees within can not cluster over the entrance—indeed, they fight shy of it, retreating back into the combs. If any colony should become very much excited by reason of a closed entrance, the heat will melt the snow automatically and thus give ventilation. But in the dead of winter there will be little or no trouble of this kind.

On arrival at the bee-cellar the sled is driven as near as possible to the cellarway. The bees are then taken up, hive by hive, and placed in their permanent location in the cellar. There is no need of removing

the snow over the entrances; for if the cellar is of the right temperature it will melt in a short time, or about the time the bees quiet down.

We find that a light snow is the most effective entrance-closer that we have ever used, and *the only thing fit to use during cold weather in winter*. The heat from the fire-cup of the smoker warms up the bees, stirring them up a good deal more than if smoke were not used. When the bees boil out at the entrance a few handfuls of light snow dropped gently over them drives them back. It is interesting to see them skedaddle back into the hive; for the snow has a tendency to cool them off. Whenever bees become cold they immediately seek the warmth of the cluster.

Last winter we moved an apiary during zero weather from what we then called our Nettleton yard, and placed them in the cellar. We never had bees winter nicer than they did, and in the spring they were the best and strongest lot of bees we had, notwithstanding that in the fall they were the weakest lot of bees—so weak that we felt that they must be put indoors.

THE HUMBLE-BEE: ITS LIFE HISTORY, AND HOW TO DOMESTICATE IT; BY F. W. L. SLADEN; ILLUSTRATED WITH PHOTOGRAPHS AND DRAWINGS BY THE AUTHOR, AND FIVE COLORED PLATES PHOTOGRAPHED DIRECT FROM NATURE.

THIS is one of the most interesting and beautiful books that have been put out for a decade. The author has obtained his information direct from nature. He explains how he has been able to decoy queen bumble-bees to start nesting under his care, and also how he has been able to get the colonies to work under glass in a specially constructed house where all the details of their behavior can be watched. In many ways the habits of bumble-bees seem to be intermediate between those of the solitary bees and of the honey-bee; but there are differences, and for their own particular purpose they have reached a high stage of perfection. The queen bumble-bee is highly "intelligent," and cares for her young as devotedly as a bird or a mammal. As the result of twenty years' intimate acquaintance with the bumble-bees, and with the aid of the decoying devices and special hives, the writer has been able in this work to present for the first time a great many new facts concerning the bumble-bee's habits. It was through the study of the bumble-bee that he was led to discover the true function of the auricle as an instrument for packing the

pollen into the corbicula box in the honey-bee and the bumble-bee. He shows, too, that the bumble-bee collects its wax from the abdomen or the bristles of the brush on the inner side of the metatarsus, or planta, of the hind legs. Casteel has since shown that the honey-bee also uses these bristles for the removal of wax, but only the row at the distal end of the metatarsus. (See *The Manipulation of the Wax Scales of the Honey-bee*, Circular No. 161, U. S. Dept. of Agriculture, Bureau of Entomology.)

The book discloses a new interest for country rambles, and is being warmly welcomed by the advocates of nature study. There is explained in full and clear detail how the nests of bumble-bees may be found and taken and set up again in the garden, and also how to make a collection of specimens and how to distinguish the British specimens. A different set of species occurs in America; but the methods by which the American species are separated may be applied to the American species; and to do this would help to stimulate the interest of the student. Some of the species resemble one another very closely; but there are slight differences in the tint and quality (length, density, and shagginess) of their furry coats. These differences are brought out very well in the colored plates which are among the very best reproductions of insects by photography in their natural colors that we have ever seen. Each species appears to have distinctive habits. Some live under ground in comparatively large colonies, with 200 or 300 workers, and will defend their nest, if disturbed, with great spirit. Others live on the surface of the ground, in communities not containing more than about 100 workers, which are very faint-hearted; and when the nest is molested they will feign death, and lie on their backs half hidden in the nest material, ready to seize and sting the fingers if they are touched. But the sting of the bumble-bee is not very severe, and it is used only under great provocation.

Bumble-bees are invaluable for fertilizing long-tubed flowers, such as red clover, for they alone of all the bees have tongues long enough to reach the nectar easily.

The book contains nearly 300 pages; is beautifully printed in large bold-faced type. We were told by some of the entomologists that recently met in Cleveland that this was undoubtedly the most complete work of any that has ever been written, and Mr. Sladen is regarded as an authority on the subject. We do know this: He has been gathering data for the last twenty years. Price \$3.25, postpaid, at this office.

Stray Straws

DR. C. C. MILLER, Marengo, Ill.

YOU ask, Mr. Editor, p. 4, for a way to mark a queen with a permanent color. In "Die Rassenzucht," Dr. U. Kramer, page 111, recommends a quickly drying lac—red, yellow, white, or blue—not so thin that it will run, and not so thick that it will not adhere. He gives full instruction as to the whole proceeding.

IN 1872—'3 I spent some months in Cincinnati helping in a subordinate way to get up the first May musical festival under the direction of Theodore Thomas. One day a quiet old gentleman came into my office to chat about bees. In spite of his modest demeanor he knew a lot about them. He was the Rev. L. L. Langstroth.

A. I. ROOT, do ye mind that time when we slept together in a western city at which there was a national bee convention? Next morning, as we walked along the street I was somewhat disconcerted to pull out of my pocket a night-cap. I made no use of night-caps, either the cloth or liquid kind; but I presently found out it had been put into my pocket inadvertently by the man who had slept with me.

NOTWITHSTANDING all the improvements that have been made in beekeeping, there's one thing that is no better in quality nor greater in quantity than it was 50 years ago. That's enthusiasm in the business. Young fellow, you think you're having a jolly good time learning all the up-to-date things in beekeeping. Well, we old codgers had just as good a time 50 years ago learning what was up-to-date at that time. Now hold right still while I tell you another thing. I've just as much fun now as I had 50 years ago in seeing what the bees will do to my plans after I've studied them out. So enthusiasm is a constant factor if you're a born beekeeper.

THE editor, p. 2, seems to have a desire that I should jab J. L. Byer for his views. All right: come on and be jabbed, Bro. Byer. You seem to hold, p. 6, that with solid combs of honey and nowhere else for the bees to cluster, bees will winter all right. That will leave the bees in layers $\frac{1}{4}$ inch thick between the combs; and if they *remain* with no better chance for clustering "during the weeks and weeks of cold zero weather," my guess is that they'll be dead, dead. Your experiment will prove nothing, for, as ye editor suggests, the minute you stopped feeding them they began scooping out a winter nest. Moreover, you don't

say how much room they had to cluster under the bottom-bars. Surely more than $\frac{1}{4}$ inch. Editor Root holds that instinct makes the bees empty out a place to cluster. I suspect instinct makes them eat the honey, and that happens to leave the empty space. And I suspect that, if there was a possibility of keeping the combs constantly solid with honey, they would winter just as well without an empty cell in the hive. You say, "They can't warm up these slabs, because they project beyond the cluster where it is cold. These cold projections convey the cold back to the cluster." Say, Mr. Editor, did you ever see a solid comb project down through the cluster? Come down into my cellar and I'll show you the cluster of bees projecting down below the combs—two inches—but never a filled cell below the cluster. I don't know how small a space below the combs will answer for clustering; but I know that bees can cluster all right below bottom-bars, for I know my bees *do*. Theoretically one of you is just as far from my view of the truth as the other; but for practical purposes the Canuck holds the safer ground. Now, Mr. Editor, haven't I jabbed J. L. enough? [When you ask the question whether we ever saw a solid comb project down through the cluster, you are evidently thinking of indoor wintering. What we have had in mind all the time on the subject of winter nests has been *outdoor* wintering, and not indoor. As we said over a year ago, this question of the proper formation of a winter nest is not particularly important for indoor bees, especially if there be a large clustering-space under the frames such as you use in your cellar. But when bees are wintered outdoors, and the temperature outside (assuming it is a double wall) is 20 or 30 degrees higher, it is important, at least for our locality, to have a winter nest. If you could look over our outdoor-wintered colonies on a day when the temperature is about 10 degrees above zero, you would find that the combs in most cases project an inch or more below the cluster, and eight or ten inches beyond the cluster in the direction of the length of the hive. The point we tried to make was that solid combs of sealed stores that stick out beyond the bunch of bees into an atmosphere that is down to freezing, or below, will convey the cold clear through the cluster almost as badly as so many slabs of marble. The $\frac{1}{4}$ or $\frac{3}{8}$ inch of bees between the combs can not make up for this constant loss of heat.—ED.]

Beekeeping in California

P. C. CHADWICK, Redlands, Cal.

Nearly half an inch of rain fell on Jan. 9. We are hoping it may be the beginning of the end of our long dry spell.

* * *

The condition of bees in general in this State is about an average, judging from reports received up to date.

* * *

Black brood is still spreading in our Southland. Every beekeeper should know of its approach, and prepare to combat it.

* * *

The price of bees has materially advanced in recent years. There are now but few for sale at \$3.50 or less per colony, as was the case a few years ago.

* * *

Some time ago I predicted a warm wet winter; but there is where I missed my guess and ruined my reputation as a weather prophet, as most of our local observers do.

* * *

Several men in Riverside Co., who expected to ship their bees back from Utah, are not able to do so on account of alfalfa-weevil quarantine. Some who extracted closely in anticipation of moving now find that they must feed heavily.

* * *

While visiting T. O. and L. L. Andrews, at Corona, I saw an automobile equipped with an extracting-house. It was the first I had ever seen, and it gave me a better idea of the bee business as conducted on a large scale, with an auto as a mode of quick conveyance for taking extracting equipment to out-apiaries.

* * *

Early in September I visited a beekeeper, and during my conversation I mentioned the imminent danger of black brood. Perfectly astounded, he ripped out an oath, asking what that was. He owns in partnership nearly 600 colonies, but never has time to read a bee paper. He will probably know more of this disease some day.

* * *

I was interested in J. E. Crane's description of the many kinds of hives he found in his inspection work. My experience was much the same while traveling over the country the past season, with the exception of box and frameless hives. We have a law in this State compelling the use of movable frames, to enable the inspector to work promptly and rapidly.

Beekeepers are, as a rule, very poor advertisers. Go into almost any chamber of commerce in southern California, and if you see any display of honey at all it is not likely to be of much credit to the industry. Almost all other products are better represented than our own—not because a display of honey would not be welcomed by our commercial organizations, but just through neglect of beekeepers.

* * *

ANOTHER PLAN FOR LAYING-WORKER COLONIES.

Louis H. Scholl, p. 720, Nov. 15, give your laying-worker colony a frame of unsealed brood, then put it in the place of a strong colony. In 24 hours you will find cells started, and the laying workers and their brood will disappear. I have yet to hear of this plan having failed. I doubt, however, if it is profitable to try to save a laying-worker colony at that time of the year.

* * *

BREEDING FROM THE BEST WORKERS.

The practical ideas of practical men are worth much consideration, as is shown by results obtained. The practical work of A. T. Warr & Son, of whom I have made previous mention, in selecting their best producing colonies for breeding purposes is one such instance. While they favored the Italian blood as much as they could, the productive qualities were to be considered first. Owing to the advent of black brood in the community they are now forced to Italianize for their own protection; but it is safe to say that only the best producers will be used for breeding after the try-out.

* * *

APIARIES THAT CAN NOT BE REACHED BY AN AUTO.

Louis H. Scholl, page 579, Sept. 15, says: "The automobile is a sign of progressive beekeeping." Perhaps to a degree this is true; but Mr. Scholl should know that there are some apiaries that can not be reached by auto, the owners of which are progressive enough to keep on good ranges and get the honey first, regardless of the mode of conveyance to be used in going to and from the apiary. To them this is a secondary consideration. A few good seasons in succession would make many of us progressive in that way, while bad seasons might for ever bar us from that class.

Notes from Canada

J. L. BYER, Mt. Joy, Ont.

Mr. Sladen, recently from England, gave a warning against importing any bees from the British isles for fear of getting Isle-of-Wight disease over here. Judging by what he and others who know say, this fell scourge has all the other bee ills "beaten to a frazzle." Certainly Mr. Sladen's warning is timely, and it would be a foolish thing indeed to take any chances.

* * *

Already "jabbed" by the editor, and with the prospect of being jabbed again by such a formidable assailant as Dr. Miller, is it any wonder that I look for the next issue of GLEANINGS with trepidation? (page 2, Jan. 1). But see here, Mr. Editor; you say something about steady cold weather about the "middle of January;" at which time enough honey will be consumed to give the colony a winter nest. Here in Ontario we often have that kind of weather all through December; so, what will happen when things pan out that way, and the combs yet solid with honey?

* * *

That article of Wesley Foster's on page 13, Jan. 1, which so entertainingly tells about the beauties of photography, I read with more interest than I could have deemed possible a few months ago. Can you guess the reason? Well, I have recently invested in a camera costing about \$20.00, an English machine called the "Butcher's Carbine." I never had my hands on a camera before; but by a strange freak of chance, the first six films used are all good, and I hope to use some of them soon in this journal. I have just returned home from the northern yard, over 100 miles away from home; and while there I took several pictures of the apiary to illustrate wintering outside. I have not tried to develop them yet; and on reading friend Foster's article I am fearful that I gave too long an exposure to the films. It is needless to say I shall find out just as soon as possible. Really I must stop writing along this line, else (before I know) I shall be classed as a "camera fiend" before I have even had a peep into the rudiments of the game.

* * *

LONGEVITY OF CARNIOLAN QUEENS.

On page 743, Nov. 15, the question is asked as to whether Carniolans are prone to supersede their queens; and in answer to this I must say no, most decidedly. As a matter of fact, I have often wished that such was the case, as one fault I have with them is that the queens are very long-lived, and will sometimes be left when they are

too old to be of good service. As I clip all my queens I know what I am talking about. No doubt claims are made sometimes by people who do not clip, so they can not be positive on matters of this kind. Some time ago I reported having kept a queen until she was seven years old—no doubt about the matter at all, as I have abundant evidence to prove the statement. Well, this particular queen was a pure Carniolan, and her wings were *all* off close to her back, so that there were additional risks according to some anti-clippers.

* * *

IS FOUL BROOD MORE VIRULENT AT TIMES?

On page 719, Nov. 15, Mr. Crane speaks of foul brood being more virulent in some places than in others, and says that he does not wonder at the variety of opinions expressed on the subject by different writers. What kind of foul brood is meant? If European foul brood I can understand how differences of opinion might arise; but if our old acquaintance American foul brood is meant, I can not agree with him. I have seen it in different counties in Ontario in all stages, and I can think of no malady affecting any living organism that is more uniform in its actions than this disease. As a general principle, it can be stated that larvæ die from this disease only when fed infected honey, or what amounts to the same thing, when a larva is hatched in a cell that has the disease scales, and thus becomes infected. Disease makes progress according to the number of larvæ that happen to get the disease given to them. As an illustration, the following will make the point clear; and as it is a common happening in sections where American foul brood is present, no doubt many have noticed how it works.

Let a colony that is foul be robbed out late in the fall when brood-rearing has stopped, and as a result it may be that none of the robbers will cause disease to break out in their colonies, for the simple reason that no brood is present and the honey is used before any larvæ are in evidence to be fed this diseased honey. On the other hand, let an apiary rob out a foul colony in the spring time, especially just at the close of fruit bloom, and every colony taking part in the robbing will be diseased—nothing surer. The same principle on a modified scale applies to all stages of the disease, and will always explain why a colony gets bad very quickly in one case, while another may have had the disease for quite a while before getting in bad order.

Conversations with Doolittle

At Borodino, New York.

YE OLDEN TIMES.

A correspondent writes, "If Doolittle does not have something February 1st about 'Ye Olden Times' in beekeeping I shall be greatly disappointed."

My memory goes back to the days when father kept bees in box hives, and to log-gum times. In that age fifteen and twenty pound boxes for comb honey were made of rough half-inch lumber with a hole bored in one side, over which was placed a piece of glass broken from a window pane through which I, as a boy, would peer to see whether any honey was being built. Usually I did not even see a bee inside. It had to be a good season to drive the bees into these boxes, for in most cases there was only one auger-hole, an inch or an inch and a half in diameter, through the top-board to the hive. This board was of about the same thickness, and the big empty honey-box was without any starter of comb. From our standpoint of to-day, this would be a great drawback; but, strange as it may appear, during one season father took as much as 70 pounds of comb honey from one of these rough hive boxes in which were hived two swarms which came out and clustered together. A few years later the lumber for these boxes was planed on the inside, and a piece of white comb stuck fast to the center of the top. This greatly promoted the willingness of the bees to enter the honey-receptacles. However, few of the farmers did little else than hive swarms in old boxes, portions of hollow logs, half-barrels, or nail-kegs, in those times of 60 to 80 years ago.

Then all colonies not needed for wintering were killed by setting the hives over fumes of burning sulphur. After the bees were dead, the hives were pried apart, or the old logs split open and the combs of honey cut out. In this way from each hive or log twenty to fifty pounds of honey were obtained, the best and whitest of which was put into bright tin pans to be disposed of, while all of the rest was put into a cloth bag and hung up before the fireplace to drain out as strained honey. After practically all the honey had drained out, the bag was immersed in water, as hot as the hand could bear, and the whole was kneaded and worked over with the pudding-stick till all the sweet had been separated from the comb. This sweetened water was boiled down to honey water. It was then used to sweeten apple sauce or pies. In these different ways much pleasure and enjoyment

was given to the family of the farmers who kept bees.

When I began to keep bees in the latter sixties, Langstroth hives were beginning to supersede the old logs and boxes. These were thought to be the height of perfection, for each had a honey-board on which were placed six boxes six inches square by five inches deep, each having a glass on two sides, the glass being on opposite sides. Before the glass was put on, three pieces of comb were stuck to the top of each box equal distances apart, to be used by the bees as guides for building their combs in a certain direction, as well as for starters. In this way I procured my honey for the first three years. I used these boxes more or less till 1875. They held from six to six and one-half pounds, gross weight, and, strange to say, I was offered 50 cents a pound for my 1869 crop.

After these came the four-pound box with its four metal corner posts and four glass sides. This box was considered the most fancy honey-receptacle that ever was, as two sides showed the nice white capping of the honey while the other two showed its color and quality, where the cells were stuck to the glass. I doubt if there were ever more attractive packages, when filled with honey, than these glass honey-boxes with their shiny metal corner-posts.

A few years later came the Harbison three-pound box, then the two-pound section, which was soon followed by sections holding one pound—some even going so far as to make those holding as little as a half and a quarter of a pound. Both of these, however, proved to be too small for any profit, so that the one-pound section soon became the standard, and has held that place until the present time.

I might speak of many things which would now be considered drawbacks, which came about in the transition between those old times and the present. Then we did the best we could without sections, queen-excluders, bee-escapes, movable frames, comb foundation, extractors, etc.

But I wish to speak of something which seems a mystery to me. In all of those years honey brought much more in return to the producer than it does in this, the twentieth century. Father used to trade that cut comb honey, from those bright tin pans, giving 12 to 18 pounds for a pair of shoes, according to the quality of the shoes and that of the honey. Then he could get a bushel of wheat for four pounds of this

Continued on page 78.

Beekeeping Among the Rockies

WESLEY FOSTER, Boulder, Col.

INTERSTATE SHIPMENT OF DISEASED BEES.

Mr. Chadwick asks whether the bees spoken of as having been kept from being shipped into Colorado were known to be diseased. No, we did not know, except that the district where the bees are is known to be diseased. We did not try to stop the shipment by law, for one State can not legislate against another. All that was done was to notify the party of the conditions that prevailed where the shipment was intended to be made, stating that we would inspect the bees upon arrival. I do not believe that the county ordinances such as Mr. Chadwick speaks of would hold very many minutes under the rulings of the Inter-State Commerce Commission. A beekeeper would have to submit to inspection after arrival; but I do not believe that the shipment could be stopped unless the bees were known to be diseased. Our Colorado law is broad enough so that I think an inspector would be upheld in destroying all diseased bees upon arrival. This would not be just unless the disease was being introduced into a clean district. In a district where foul brood already exists, the man who shipped in bees, and a few were found diseased, should be accorded the same treatment that others in the vicinity are given.

Colorado at the present time has no European foul brood that we know of, and the beekeepers here would be very much in favor of destroying all colonies in a shipment that had this disease; and our law would stand back of the procedure. I do not think that such measures for the protection of bees from diseases are unjust. The good of the whole beekeeping fraternity is of more consequence than the desires of some unenlightened individual. Far more damage has been done by the indiscriminate shipping of diseased bees all over the country than by stringent laws that may seem to work a hardship on any one person. We must encourage in every way the legitimate spread of aggressive beekeeping methods; but the spreading of diseases must be curtailed also.

* * *

THE EFFECT OF TARIFF REDUCTION ON PRICES.

Local business houses are making increased efforts to clear their shelves of all stocks bought under present price conditions. Business men seem to be optimistic, but expect a readjustment of prices after the Democratic administration has begun its work at tariff reduction; and when the tariff is men-

tioned, the beekeeper immediately thinks of free sugar, and whether honey will be put on the free list. And the next commodity thought of is lumber. I do not know what will be done with honey; but the talk is strongly for free sugar, and perhaps the admission of lumber free of duty. Personally I believe that free sugar will aid rather than hurt the beemen. This will depend, of course, on whether sugar is reduced to the consumer by taking off the tariff. If we could get sugar for three cents instead of five or five and a half, much more of it would be fed in the fall to put the bees in prime condition for wintering. Being situated so far inland, and not familiar with the markets where foreign honey would cut a figure, I do not know what the effect would be if honey were put on the free list.

Lumber admitted free ought to have a definite effect on the price of bee-supplies; and it might be that the quality of the lumber obtainable would be improved. Taking the whole situation, I think that the beemen will not be averse to the general plans for tariff revision. What we are concerned in is a reduction in the cost of necessities for the home and in our business. One of the greatest promises of the times is that the people as a whole are asking for something definite—stated, not in political terms, such as tariff revision, but in terms of economics—a lower price for sugar, lumber, woolen and cotton goods, and all staples that consume the bulk of our incomes.

CONVERSATIONS WITH DOOLITTLE AT BORODINO, NEW YORK

Continued from page 77.

honey, and trade even-handed pound for pound for butter. And in the days of the six-pound box, I sold my whole crop to a dealer for 26 cents a pound, taking him four wagonloads, and on my return home loaded these wagons with coal at our nearest station, \$3.50 a ton. Now it takes nearly four pounds of honey to purchase what one pound did when father kept bees; and our nice section honey in one-pound sections, when sold by the wagonload, brings only 12½ cents instead of 26. Now a wagonload of coal costs \$6.80 at the same place where the \$3.50 coal was obtained in the days when beekeeping was carried on in a more primitive way. This state of affairs can hardly be laid to overproduction, as I verily believe that the per-capita consumption in those days was two if not three times as large as it is to-day.

General Correspondence

THE FUN THE PIONEERS HAD IN INVENTING NEW FIXTURES

A Bee-smoker Made of a Pan of Coals

BY DR. C. C. MILLER

How I'd like to go back and begin bee-keeping all over again with the facilities of the present day! Back yonder in 1861 the bill of fare was rather meager—no extractor, no smoker, no sections, no comb foundation, no excluder, and almost no literature. Movable combs had been invented, but I knew nothing about them. *The American Bee Journal* was started that year, but I didn't know of it. And yet I don't know. You who start in with all these things don't have the same pleasure I had in learning about each one as a new improvement. And then the lots of new plans and kinks that have been coming up all the time!

One thing, however, I'd like to have back again. I'd like to have honey keeping all the while at the same price as butter. It would seem pretty good now to have honey selling at 30 or 40 cents a pound. Another good thing of those bygone days was the delight of studying up some new plan or implement, lying awake at night thinking it over. Honey may never catch up with butter again in price, but the fun of studying up new things is just as great now as it was back yonder. In any given case there is always the zest that is given to it by the uncertainty as to what the bees will do with it when it is submitted to them. Even after being submitted to them there is the uncertainty as to whether they will do exactly the same next time, when conditions may be a trifle different.

The first surplus honey I produced was just as good to eat as any I produce now—just as white, but not so regular. A box with a capacity of five or six pounds, with a pane of glass on two opposite sides, was placed along with three others on top of a box hive, with a cover telescoping over it. Such a box, when filled, seemed just as pleasing a sight as the finest sections do nowadays. By way of something extra I had some boxes with four glass sides and wooden posts at the corners. The bees built comb in these boxes at their own sweet will except for the persuasion of a few pieces of comb fastened to the top of the box. If one or all of these starters fell to the bottom, the bees were not greatly disconcerted. They simply built from the bottom up.

This was quite in advance of what some

others were doing, whose only way to secure surplus was to brimstone a colony, and then dig out as well as might be the honey mixed with pollen and dead bees. The heaviest and the lightest skeps were "taken up," the heaviest because they had the most honey, and the lightest because they would die in winter anyhow.

The first sections were somewhat crude. They were in four pieces, and the top piece had in it a saw-kerf to receive the foundation. This top piece was partly split apart, and then brought together again after the insertion of the foundation. I didn't make very good work of it, and wanted to learn how to do it better. I wrote to A. I. Root, telling him exactly how I put in the foundation, making a sketch of it, and asking him how I should do it. I think I had no intention of having my letter published—only to have the proper instruction given in *GLEANINGS*, a publication that I think at that time was gotten out by the aid of a windmill. Promptly came back a round sum in payment for the letter, which was published in full; but not a word was given as to how the work should be better done!

I well remember my first visit to Medina. I reached it by stage, there being no railroad then. Wouldn't a stage coach have a busy time of it now, carrying out all the stuff shipped away by The A. I. Root Co.! On that visit I had the honor of showing A. I. Root an improved method of showing bees. Yes, you might hardly believe that the man who has sent out so many smokers would learn from me any thing in that line, but he did. I don't remember what plan he was then using. I don't think that, at that time, he smoked them with tobacco as some others did, but the plan I showed him was to have ashes and burning coals in an old tin pan. He was much pleased with the improvement, and I had hardly left the town when he put it in practice, with the result that he jeopardized if he did not burn up a colony by setting fire to the sawdust that surrounded the hive.

A little later I tried to improve on this. I had a close-fitting cover on a kettle containing burning coals and brands, and attached to the cover were two small rubber tubes. I blew into one of them, and with the other directed the smoke upon the bees. It smoked them all right, only it didn't hold fire well unless I "blowed" all the time.

My! my! my! what changes there have been. What improvements! Will there be any more, I wonder? A few years ago a prominent writer said we were not to ex-

pect any more improvements in beekeeping. And yet improvements have been appearing right along ever since then. But I don't see any chance for further improvements—do you? Yet how many of us thought before they appeared that there was any need of sections, foundation, etc.? I don't know what they'll be; but I'm looking for just as great advance in the next 50 years as there has been in the past 50; and it may be that in 1963 some one will be writing reminiscences of "the many great advances in beekeeping since 1913." Who knows?

Marengo, Ill.

WINTER FEEDING; SOFT SUGAR VS. CANDY

An Open Letter to the Editor

BY ARTHUR C. MILLER

In an editorial (Jan. 1, p. 3) concerning the supplying of extra stores in mid-winter to make up for any possible shortage caused by the mild weather of the fall and early winter, you quote me thus: "Mr. A. C. Miller recently made the statement that coffee A sugar (a moist sugar) can be given to the bees direct;" then you say you "have never tried it," and at once proceed to tell how to use it. Phew! Wait a minute till I whistle, or I may say something hot like ginger and suggestive of brimstone.

In some climates and conditions the bees *may* get by when provided as you direct; but in others, not, nit!

Now I, A. C. Miller, never *recommended* the A sugar for *winter*. You do not say specifically that I did; but taken with the rest of the editorial, that is the natural and unavoidable implication. If, perchance, some poor chump thinks a thing must be good because I said it (or was supposed to have said it), and goes and does something just near enough to what I did say to be *entirely different*, and the results are a bee funeral, there will be something unpleasant coming my way. Excuse my dodging.

Now, here is what I actually said concerning soft sugar for winter use: "Colonies have been wintered on it without any thing else, and that was in southern New Hampshire; but I want to know more about its use thus before I advocate it for such purpose." (Dec. 1, 1912, p. 771.) I have a sort of hazy idea that that assembly of words pretty distinctly conveys the information that I do *not* yet advocate the use of soft sugar for winter.

Let me quote again: "The soft A sugar put in a division-board feeder and hung in beside the brood-nest will serve to keep up brood-rearing as well as the most painstaking

feeding with syrup," etc. (Dec. 1, 1912, p. 771). That does *not* exactly suggest *winter* feeding—at least it doesn't to me.

In your suggestion as to how you think the soft sugar may be used for winter, you would have it put in a dish on top of the frames with sticks across the dish to give the bees access to it under the cushion. Just stop and consider what you have suggested. Little Mr. Innocent, not wanting a lot of paper pie-dishes, goes and uses a soup-plate from the pantry shelf. The bees find a nice cold stone over their heads, and not the remotest suggestion that there is food on top of it, and they starve. Remember, you are suggesting putting that Dutch ceiling over their bedroom in mid winter.

Well, to keep you from feeling too much remorse, I will grant that, between some warm spells, a thick cushion and a lot of bees, the latter do find their way up to the sugar. Bully! But old Boreas kicks up a muss, and the bottom drops out of the thermometer and stays out for a week. Well, why waste words on what happens? It is just as well if you and I do not know what that fellow says about us.

Before we go further, I wish to do a little defining so that, if possible, I can not be misunderstood.

There are several sorts of feeding, one for brood stimulation, one for stores given in mild weather, and one for emergencies given when, for any reason, it is not feasible to expose or seriously disturb the colony. Those "any reasons" may have to do with our personal convenience, as lack of time, dislike of cold fingers or wet feet, laziness, or plain every-day consideration of dollars and cents, as represented in time and material.

At this particular time we are considering the emergencies of colonies starving in cold weather, and we want to prevent that starvation; and if we are worth our keep we want to do it in the most effective and the most economical way.

So far as at present known, a slab of candy placed over the frames meets the conditions better than any other method. It is an old idea and a good practical one. But the making of the candy is a stumblingblock to many. Some will not take the trouble to make it right, others seem unable to do so; and still others, after one attempt, give it up in disgust, and try syrup or let the bees "go hang."

There are candies and candies, and some are good and some are only near good. Your hard candy is all right, but many persons will make a failure of it. The candy made after the Fuller formula (Sept.

1, 1912, p. 545) is easier to get just right. (Pure glucose for the purpose can be obtained from most candy-makers.) This candy has the advantage of *staying right* until consumed.

Common "fondant," as made by the candy-manufacturers, is excellent; but unless it is *just right* it will not stay right, but will soften when subjected to the conditions of the hive and run down between the combs. The property of "rightness" in fondant seems to be dependent on the proportion of tartaric acid to sugar and the time they are boiled together. Some candy-makers can make a firm non-softening fondant every time, while others can not.

On orders for one hundred pounds or over, most candy-makers will make up candy after any desired formula, and will cut it into blocks or slabs of any desired size, and at a cost not so very much above the cost of the sugar. Not a few beekeepers have the professional candy-men make their bee candy for them, considering it better and cheaper than making it at home.

Another word about soft sugar and I am done—no, not out of sputter, but just holding up for a future time.

The use of soft sugar for *stimulative feeding* was, so far as I can learn, first given to the beekeepers by Samuel Simmins, of England, and he should be given the credit for it. I have done so in previous articles, but did not in those quoted. It has been used in this country for many years, but does not seem to have become as widely known as its merits deserve. Now, if your editorial does not put a damper on its use by getting some people in wrong on it—and *they* will surely speak right out loud—its use may spread.

There, I feel better. As I bear no ill feelings, I trust that you will soon be able to sit up and take a little nourishment. As an *emergency* diet, I would suggest *candy*.

Providence, R. I., Jan. 9, 1912.

[Regarding the question of soft sugar for winter feed, we plead guilty that Mr. Miller did not recommend it for cold weather; but we see no reason in the world why it could not be used at such a time if it could be used in warm weather. While it is true that bees can get water during hot weather when they could not during winter, yet as a rule enough moisture collects in the hive to give the bees all the water they need. If the soft sugar is placed in paper pie-plates, the same being placed right above the cluster, as we recommended it, the moisture from the bees ascending will, in all probability, soften it enough more so that it will be excellent winter food.

If we were guilty of misquoting, we are glad of it now, because it has drawn out a valuable article that will be a stimulus to further discussion of a very important matter—what to feed bees during mid winter when no combs of stores are available. In this connection, if Mr. Miller did not recommend feeding soft sugar during mid winter, there are others who did; but just who, we can not now recall. Very often, by reading a journal for a year one will gather a composite opinion; and that is precisely what we did when we misquoted our friend Miller.

Regarding "fondant" and any sugar using glucose, we have a fear that they will not be all that is desired. We should be more afraid of the use of fondant and candy with glucose in—much more so—than we would of soft cane sugar placed in the paper pie-plates above the bees.

Later.—We sent the above footnote to Mr. Miller, and he has made a further reply which follows.—Ed.]

MORE SUGAR.

That paper pie-plate seems to bother the editor. It is like a cork on a fishline, bound to bob up; but just wait until the condensed moisture he is banking on for the sugar gets in its fine work on that pie-plate, and he will have a first-class paper-pulp "flap-jack." Well, never mind; it is quite likely to be forty-leven miles from the would-be user, and he will try a wash-boiler or an ash-sifter or some other convenient thing.

Now, I hope that I am a brave man, or, what is perhaps as good, am believed to be, for I see danger in what I am about to do. I am going to tell just how the New Hampshire man used the soft sugar when he wintered the two colonies on it. The danger lies in my being given the credit of it and of recommending it, when, as a matter of fact, I am only reporting it.

In the first place, the man who did it was Mr. A. A. Byard, of West Chesterfield, N. H. In the second place, he prepared his bees in the fall, late in the fall, but still the bees could be handled. And he did it thus:

Three empty combs were hung in the middle of each of two chaff-packed hives. On each side of and close up to them were hung division-board feeders solid full of soft sugar. The spaces back of the feeders were stuffed full of dry leaves.

The bees were then shaken into these prepared hives. Now, I do *not* know whether he shook them in on top of the frames and feeders or down in front of the entrance and let them waltz in; but he got them into those hives and on to and between the combs—leastwise *most* of them—for he

so planned space to bees that when the latter had crowded in as tight as if Mrs. Mulligan's goat had butted them in, some of them still stuck out at the entrance. See the point? Well, it is this: The *whole space was full of bees*. That is *not* the way they are on combs of honey in a brood-chamber under normal conditions. No.

Over the combs, feeders, and bees he had a sheet of oilcloth (enameled cloth), slippery side down, and on top of that more leaves—lots more, nice dry maple leaves. (Packing is not my long suit, so you can tell that it is some other fellow's circus that I am talking about.)

Then he said "go it;" and he went, and the bees stayed; and in the spring the two colonies were as fine as any he had, and he had some fine ones.

Certainly he had to give more combs in the spring; but that is not part of this story.

Now, Byard is the man who did it. And I'll whisper another thing, though he may shake half the life out of me when he finds it out. (Oh, yes! he can, for he is almost seven feet long, and I am not.) It is this: Byard is a wizard—yes, sir, a sure-nuf wizard. I wish you could see him put foundation in sections—make you cry with envy. What has that got to do with soft sugar? I was only going to the foundation of the thing.

Don't worry, dear editor, don't worry, I mean about fondant and bee candy with glucose in it. A whole lot of beekeepers in little old New England have used it successfully for several seasons. It is a hard condition which confronts you, not a theory.

Providence, R. I., Jan. 15.

THE DESTRUCTIVE FREEZE IN CALIFORNIA

BY P. C. CHADWICK

Listen to this short story; preserve this issue for reference ten or twenty years from now. Jan. 1, 2, and 3, 1913, were as fair, bright, warm winter days as California may ever expect to see. On the fourth, the winter morning chill did not yield to the sun as usual. A cool wind began to shift from one direction to another, only to settle itself in the north. Near the noon hour it was a "norther in earnest." Dust became blinding; leaves were whipped from the trees; telephone wires were crossed and crisscrossed. Fruit-growers began to look

anxious; for the grave danger, *frost*, is always feared by them. All day and all night it continued; but instead of holding the temperature above danger, as expected, it went steadily down, in the face of the wind. All day Sunday, the 5th, it blew a gale; the highest point reached in temperature was 40 at noon. Monday morning, Jan. 6, gave us a temperature of 18, with a howling northern gale still in progress.

Many fruit-growers threw up their hands in despair. Many had smudged all night while the frost was penetrating the fruit a few feet from their smudge-pots.

By mid-afternoon another danger was approaching—the trees! the trees! back to the smudge-pots! save the trees! Tuesday morning, the 7th, great clouds of dense black smoke were hanging in the silent air. Auto load after auto load of smoke-be-grimed men were arriving from the all-night fight with Jack Frost, to save the trees, dressed in gloves and overcoats, with heads wrapped tightly, and the wearers half frozen by the stinging cold.

Almost by accident I went into a plumbing shop where the plumber had just opened up for the day's business; but his telephone was ringing, "Water-pipe burst." Busier plumbers were never seen. Water-pipes burst by the score; closet-tanks were frozen; a fire-hydrant burst; ice in the gutters—everywhere ice, ice, ice; and all of this in Redlands, Cal., and the same tale may be told in any of our southland cities of the great so-called frostless belt. No man had ever seen such before, and we pray that none may ever see it again. The \$50,000,000 citrus crop of southern California is "gone up in smoke." People fail to realize the extent of the disaster.

But how about the beemen? I do not know. One thing is quite sure—every pollen-producing flower has been destroyed. The eucalyptus bloom is largely if not completely destroyed. All of our southland districts have suffered alike. All must wait for a new source to develop from which the little bee can gather an impetus for renewed hope sufficient to cause them to continue breeding operations. Orange bloom is doubtful as to the quantity the trees will be able to put out. Many trees are badly injured. As to the sage, we do not know. Hope is entertained that, if we should get sufficient rain, it will bloom profusely; but it may be the bloom is injured deep in the stem from the excessive freeze. No such freeze has ever been experienced in the recollection of the oldest inhabitants, so we must wait patiently our future.

Redlands, Cal.



This is not an iceberg, but an orange-tree in Redlands, Cal., on which the spray from a garden hose was left running during the night of Jan. 6, 1913. The picture was taken about 10 A.M., Jan. 7, and gives an idea of the intense cold in southern California on the above date. Photographed by E. T. Everett, of Redlands—to be copyrighted. Permission to print granted GLEANINGS IN BEE CULTURE.—P. C. CHADWICK.



W. A. Grove's apiary and honey-house, New Haven, Vt.

EXPERIENCES OF A FOUL-BROOD INSPECTOR

The Value of Vigorous Italians in a Diseased Locality

BY J. E. CRANE

Continued from page 58, Jan. 15.

One gentleman, whose reputation as an intelligent beekeeper was known to me, invited me to visit him, and I anticipated a treat. Almost all his bees were Italians, and he told me he had no fear of foul brood. I was rather surprised, because I had seen its deadly work in other places. But he stated that at one time he bought a lot of bees and transferred them into his hives and put the odds and ends of wax and honey out in the open for his bees to clean up, after which he learned that the colonies he had bought had foul brood. Almost every one of his black colonies was ruined, while his Italian stock remained uninjured. This made him wise, and he has since kept his stock well bred with Italian queens, and he has had little trouble with foul brood.

Last winter he went over to a town some miles away and bought eight or ten hives of black bees that were represented as being free from disease. But when spring came, European foul brood developed. "Now look at that one," said he. I looked, and found the bees black and in an advanced stage of foul brood. "Now look at this one," said he. "It was bad in the spring, but I put in an Italian queen." I looked very carefully, but not a trace of disease could I find. This beekeeper had no use for

"goldens," but wanted dark or leather-colored Italians. The fact that he has kept up his stock and had 160 colonies in one yard, while his neighbors that stuck to black bees had nearly all gone out of business, would indicate that there is much in his views and method of combating and curing foul brood.

I found another very progressive beekeeper trying to cure disease by using golden Italians; but I believe that where colonies were very bad, he destroyed the old combs. He has been fighting it for years, and feels that, with the assistance of Italian strains of bees, he has succeeded very well. The last time I saw him he thought his bees were entirely free from it, while most of the black bees in hundreds of colonies in his neighborhood are dead as a result of the ravages of foul brood. He told me one thing of great interest. He said that he had never been able to rear a queen in a foul-broody hive that proved to be of any value in combating the disease, and that to cure a colony the queen must be reared in a hive of healthy bees. It sounds reasonable.

I met another extensive beekeeper who was preparing to rear queens. He had about 200 colonies in one yard. He had had some trouble with foul brood, but thought he had it all cleaned out; but just as I was leaving I opened a colony of most beautiful golden Italians, and, much to his surprise, showed him some diseased brood. "There it is again. I supposed that, the yellower the bees were, the better they would resist disease," said he. I gave him

my opinion that the ability of bees to resist disease depended more on their strength and vigor of constitution than the color of their abdominal rings.

On the whole it now looks as though the introduction of vigorous strains of Italian bees might, in skillful hands, prove a short cut in curing European foul brood.

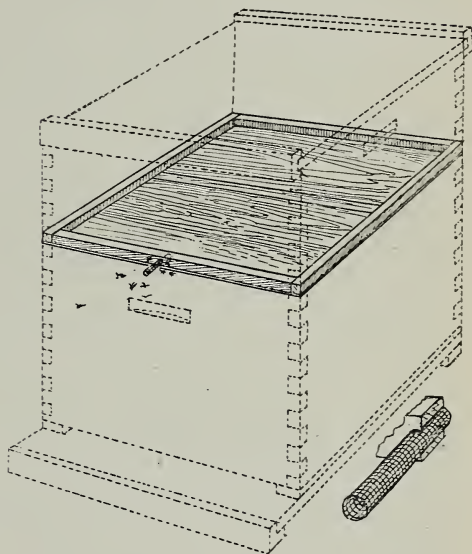
NEW STYLE OF BEE-ESCAPE.

Speaking of short cuts reminds me of a new style of bee-escape one beekeeper showed me, for which credit should be given to A. W. Darby, of Alburgh, Vt. It was simply a frame of one-inch lumber the size of the brood-chamber, with thin lumber one-fourth or three-eighths of an inch thick nailed to one side with a three-eighths hole bored in one end, into which was inserted a little tube of wire cloth about three inches long, and the diameter of a lead-pencil. It was used as a honey-board without the tube usually; but when wanted as an escape-board it was placed under the super, and the tube inserted. It then makes the best kind of escape, and costs much less than the Porter. We have tested it, and know it works very satisfactorily. The same answers for a honey-board, and the originator uses it for feeding and also for ventilating; for, with a hole through the bottom of this board, the bees in hot weather draw the air down through it and out at the entrance. When closed with a cover, or when a quilt is placed in it in early spring, it helps to retain the heat; and during very hot weather it is a shelter from the heat of the sun. The returning bees try to get into the super at the base of the wire-cloth tube, but not at the end. We have tested it, and it works perfectly.

GREAT DIFFERENCE IN TEMPER OF BEES.

I have found a great difference in the temper of bees in different yards. Some

are gentle, and very easily handled, while others are so cross that it is hard to find words to describe them. So far I have not



been able to account for the difference. I have sometimes thought some beekeepers were not altogether averse to seeing the inspector stung a little, as they seemed quite amused at his misfortune.

SOME ATTRACTIVE APIARIES.

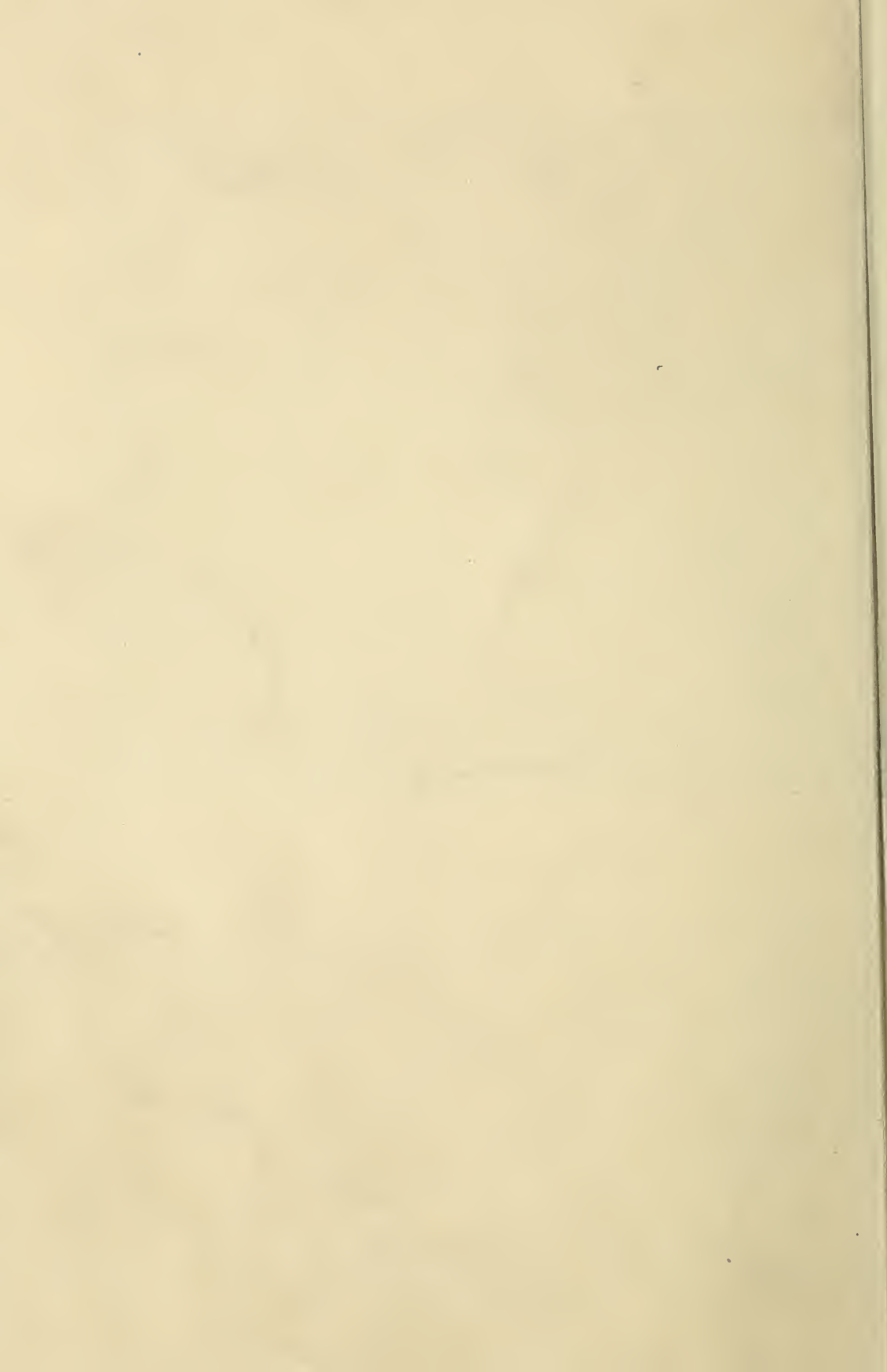
One very intelligent beekeeper had two or three sheep in his bee-yard all summer. They kept it looking like a lawn, and it seemed to me the best plan I have ever known for keeping down the grass, as the sheep were never in the way. Another beekeeper, Mr. W. A. Grover, of New Haven, Vt., had an exceedingly attractive yard and honey-house. His apiary numbers 100 colonies; and, besides, he has a large farm;

keeps about 15 cows and 600 hens. I inquired how many dozen eggs his 600 hens produced. He said he did not know, but he had sold \$1300 worth of eggs in a year, and it cost him about one half for feed for them.

He hives his early swarms on old combs that he has wintered over; and after a colony has been queenless for seven or eight days, or long enough so that the brood is



Grass "mown" by sheep pastured in the yard.





FIRST ANNUAL CONVENTION OF IOWA BEEKEEPERS' ASSOCIATION.

Top row, from left to right: G. W. Fehleisen, B. A. Aldrich, J. S. Myers, A. D. Clancy, J. C. Donahue, Mr. B. H. Tripp. First row from top: G. W. Nance, J. P. Blunk, L. M. Carlson, W. S. Pangburn, J. W. Stine, J. B. Espy, W. H. Winch, J. H. Schweer. Second row from top: J. C. Stocks, Arthur Wright, W. H. Pearson, Mrs. E. C. Wheeler, Miss Nina Secor, E. E. Townsend, R. R. Grantham, J. H. Burghdoff. Third row from top: A. F. Bonney, E. C. Wheeler, Eugene Secor, S. W. Snyder, Frank C. Pellett, J. L. Strong, M. G. Dadant. Fourth row from top: Hamlin B. Miller, J. W. Schlenker, F. C. Scranton.

all sealed, he puts a new swarm on these combs. Of course the queen-cells are destroyed. He says they rarely or never swarm; and as brood is constantly hatching, the new swarm is maintained at sufficient strength to store an abundance of surplus if any is to be had.

Middlebury, Vt.

REPORT OF MEETING OF IOWA BEEKEEPERS' ASSOCIATION

BY F. C. SCRANTON

The Iowa Beekeepers' Association held its first annual session at Des Moines, Dec. 12 and 13. Both the attendance and the interest shown were very encouraging. Beekeepers from all parts of the State attended, and gave their experiences on the production and sale of honey. It was pleasing

to note the determination of all present to raise the honey standards as high as possible, and to clean up foul brood effectively.

Prof. W. J. Kennedy, of the Extension Department of the State Agricultural College at Ames, and Prof. H. E. Summers, State Entomologist, both addressed the meeting, and were heartily in favor of the college extending all possible assistance to the beekeepers of the State. Both of these gentlemen approved of the establishment of an apicultural department at Ames. Prof. Kennedy has placed Mr. C. H. True, of Edgewood, on the extension department in charge of apiculture for this season. Prof. Summers very generously proffered the service of his department in the inspection work. His men are continually covering the State inspecting plants and trees, and could very economically handle the bee inspection at the same time.

A constitution for the association was adopted, and the usual routine work of passing resolutions, appointing committees, etc., was carried out.

It was decided to ask that the State Entomologist be given an assistant in apiculture; that the State legislature provide sufficient appropriation to inspect apiaries and treat diseased colonies thoroughly; that to insure against spreading foul brood our present law should be amended to prohibit shipment of bees from outside the State or from one county to another without a certificate of health signed by some duly authorized Government or State inspector.

The following officers were elected for the ensuing year:

President, Frank C. Pellett, Atlantic, Ia.
Vice-president, J. W. Stine, Salem, Ia.
Secretary, S. W. Snyder, Center Point, Iowa.

Treasurer, C. H. True, Edgewood, Ia.

Directors: Dr. A. F. Bonney, Buck Grove, Ia.; Hamlin B. Miller, Marshalltown, Ia.; E. C. Wheeler, Marshalltown, Ia.

The next annual convention will be held at Des Moines.

A FURTHER NOTE ON THE SUPPOSED DISLIKE OF BEES FOR BLACK

BY JOHN H. LOVELL

It has been stated that a black object moving about in the apiary is more readily seen by the bees than a white one; conversely, in the darkness of night a white object is the more conspicuous. Moth-flowers blooming in the evening are usually white; blue or red petals would be almost invisible. In this connection it is not without interest to note that ghosts are always



FIG. 1.—F. A. Powers' telescopic covers with cushions nailed to inner covers, showing also the concrete hive-stands.

described as white—a black ghost would be an anomaly. Since white contrasts so strongly with black, it follows of necessity that, in the white light of a summer's day, a black object is more conspicuous than a white one.

A bright-red object excites anger or annoyance when inanimate as much as when endowed with life. When the wearer of a bright-red cloak in crossing a pasture is chased by a bull, if the cloak is thrown upon the ground, the angry animal attacks it, giving the wearer a chance to escape. Children may be rendered nervous and irritable, not only when dressed in bright-red clothing, but also by sitting much of the time in rooms with walls painted a glaring red. But if a black shawl be thrown upon the ground near a hive, or be spread over a bush, the bees pay no attention to it—at least they do not attempt to sting it. But a black animal moving about among the hives excites fear, and receives more stings than it would if white, because it is more conspicuous. But a beekeeper dressed in immaculate white, if he disturbs a hive of cross bees, will undoubtedly be attacked.

In the case related by Dr. Miller, where a small number of bees followed the black head of a hat-pin half a day, it seems not improbable that the smooth shining black ball exercised an attraction comparable to that of an electric bulb for many insects at dark. Naturally bees experience an antipathy to any one working in the apiary, and are inclined to follow him from place to place. The shining black head of the hat-pin would attract their attention

more than any other point on the person of the apiarist; and they would, therefore, be likely to direct their efforts against it more than to any other spot.

Waldoboro, Maine.

CONCRETE HIVE-STANDS

BY E. F. ATWATER

Among the beekeepers of South Idaho and East Oregon there are probably none who are deeper thinkers or more thorough beekeepers than Mr. F. A. Powers, of Parma, Idaho. Large in person, and with that cheerful disposition which makes him laugh when confronted with difficulties, one may well expect him to be a beekeeper of originality and enterprise.

Located on the fertile bench land at the east of Parma, with an abundance of alfalfa near by, with an orchard windbreak, his apiary of 250 colonies is very favorably situated. As Mr. Powers is a specialist in the production of fancy comb honey his hives and appliances are built with that end in view. His hive is virtually a standard ten-frame hive in which he uses nine staple-spaced frames and a heavy dummy. Owing to the cool nights prevalent in Idaho, and with a desire to maintain a favorable temperature in comb-honey supers, as well as to afford sufficient protection for wintering in the mild climate of the Boise Valley, Mr. Powers uses a telescoping lid perhaps 4 inches deep, with a cushion over an inner cover. The cover proper consists of a simple rim with tin or galvanized iron over the

top. The cushion much resembles a mattress about two inches thick, which holds its shape, and is nailed to the under side of the inner cover. While some beekeepers use a cushion above an inner cover, Mr. Powers is, so far as I know, the first to invert the arrangement, using the inner cover above the cushion. By having the cushion firmly attached to the inner cover it maintains its shape, and there is one less loose piece to handle. This arrangement, as shown in Fig. 1, is used on the hives the year round, with the best results, and certainly no other apiary which the writer has examined in early spring has shown the average strength of Mr. Powers' colonies in April, 1912.

Not being satisfied with the usual make-shift hive-stands, Mr. Powers has devised and now uses the concrete stands shown in figures 1 and 2. The method of making these stands is simplicity itself. Forms perhaps two inches deep, shaped as shown, and resting directly on the bare ground, are filled with concrete, and left to harden for some time.

EXPERIMENTS WITH DIFFERENT RACES.

Mr. Powers has experimented on quite a large scale to find the best strain of bees for the production of comb honey in his locality. Starting with an excellent strain of Italians, the first experiment was the introduction of Carniolan breeding queens, from which the entire yard was requeened. If I am not mistaken, from the resultant Carnio-Italian cross Mr. Powers secured the largest average per colony which he has ever taken.

About this time the rise of Banat bees occurred in our beekeeping periodicals. Imported queens of this race were secured and tested. It was found that the new bees, while perhaps not so prolific as the Carniolans, produced fully

as much fancy honey, perhaps even exceeding the Carniolans in whiteness of capping, in using the minimum of propolis and in gentleness.

The yard was then requeened with daughters of the Banat breeders, most of them mating with Italian drones. But after trying the Banats and their crosses for some years Mr. Powers has come to think less highly of them than before. Their universal fault, in this locality, is their diminution in strength and working energy during the blossoming of the second crop of alfalfa—the very time when we need colonies with a maximum of strength.

Meridian, Idaho.

[Nearly all the reports have indicated that the Banats are less desirable than Italians or Carniolans. It looks as though they, like the Punics, deserve to be forgotten.—ED.]



FIG. 2.—How the concrete hive-stands are made.



Dec 10th
 Col & G Richards

1870.

Deliver to me on or before April 1st
 1871, at Harpersville N.Y. Two of
 JOSEPH GOULD'S COMMON SENSE BEE HIVES, for which I
 agree to pay the sum of Three Dollars each on de-
 livery, for Value Received. A. Lyak Lyon
 No 1

Copy of a bee-hive contract of 43 years ago. See letter from George Richards, on another page.

INVENTIONS AND IMPROVEMENTS THAT HAVE TAKEN PLACE DURING THE LAST FORTY YEARS

BY E. R. ROOT

To record the history of the inventions or improvements, rather, during the last forty years means that I must go back at least twenty years further; for sixty years has really seen all the important developments that have made bee culture what it is to-day.

There are three inventions that revolutionized the methods of work with bees, and which really form the basis of all modern methods of management to-day. First and foremost is the invention of movable frames by Father Langstroth in 1851. No one to-day, either in Europe or this country, I believe, questions Mr. Langstroth's right to the honor of this great invention, for practically all hives and frames in use to-day are Langstroth.

Next followed the invention of comb foundation by J. Mehring, in 1857. But the foundation he made had no side walls, and so it remained for Samuel Wagner, twenty years later, to develop the product that we now use with side walls.

The next great invention was that of the honey-extractor, by Major Francisco Hruschka, in 1865. There have been a large number of improvements that have made the inventions of Langstroth, Mehring, and Hruschka much more workable than they were originally; however, it is but fair to say that Langstroth came very near making his hive and frame almost perfect at the very start; and there are possibly thousands

of our readers who would consider the later improvements made in the Langstroth frame and hive of doubtful value. It is, nevertheless, a fact that the old movable frame, as first made by Mr. Langstroth, both as regards the dimensions and style, is still in use all over the world. For extracting purposes, some of our large honey-producers will have no other. They regard any thing in the way of a self-spacing attachment, either as part of the hive or frame, as unnecessary, and a backward step. But we will not stop to argue that question now.

The original comb foundation by Mehring was a very crude product; and it may be questioned whether or not Wagner should not share equal honor in the invention. The great improvements that were made in this article had more to do with the machinery for making the product than the thing itself. It may be egotistical for me to say it, but I believe my father, A. I. Root, did more to perfect comb foundation than perhaps any other man, unless it was his co-laborer and mechanic, Mr. Alva Washburn. He certainly introduced it to the beekeeping public. The first foundation was turned out on plates, and was, therefore, a very crude article, but A. I. Root (for I well remember his early experiments) conceived the idea of having it made by means of a pair of rolls. This suggestion came to him when noticing the wet clothes as they came out from a common wringer in his own home. After consulting this friend and mechanic, Mr. Washburn, a pair of rolls were made, the product of which was fully the equal of any comb foundation made on the modern machines of to-day. To Mr. Washburn be-

longs the credit of making perfect comb foundation on rolls that were mechanically correct. The only improvement made on the Washburn mills was in the *method* of making them, by which they could be turned out for one-fifth the cost, thus enabling every beekeeper to own a comb-foundation machine if he desired. Later improvements were made by E. B. Weed, which will be referred to later.

As regards the invention of Hrushka, several machines were made and put on the market. The one made by J. L. Peabody consisted of a can that revolved without gearing. The limitations of this were such that very few of them were ever sold. To A. I. Root (if you will pardon me again) belongs the credit of making some of the first all-metal extractors that used gearing, a stationary can with baskets, or containers, for holding the combs, so constructed that they could revolve inside of the can. Thousands and thousands of these machines were sold, and very little in the way of improvement was made until the reversible extractor was put on the market. The Cowan principle was applied to the two-frame machines, and later came the Root principle of a series of baskets geared together in such a way that the reversing of one pocket reversed all at the same time. Later came the invention of Mr. Frank G. Marbach, by means of which the pockets could be reversed *automatically* by simply applying a brake and slowing down the speed of the machine. This was followed by a slip gear and better mechanism, by which the extractor of to-day has from two to ten times the capacity of the earlier machines. In this connection we must not omit to mention the honey-pump that is now being used successfully on the large-sized extractors to deliver the honey from the extractor to a tank above or anywhere else.

There is one more important invention that, perhaps, ought to be classed with the movable frame, comb foundation, and the extractor; and that is the bee-smoker. Moses Quinby was the inventor of the bellows bee-smoker, which he brought out in 1875. This was further improved by T. F. Bingham, L. C. Root, and H. H. Root, younger son of A. I. Root. The modern bee-smoker is almost as indispensable as an extractor and movable frames: for without smoke, applied by means of a convenient instrument, the work of handling bees would be awfully disagreeable if not impossible at times. The invention of father Quinby forms the basis of all the modern smokers of to-day. But to T. F. Bingham belongs the credit of

devising a smoker that blows air into the fire-cup without sucking any smoke into the bellows. Mr. Bingham's invention consisted in leaving out the tube connecting the two parts of the instrument. While that at first thought might seem to be no invention, yet it made all the difference in the world between a workable tool and an unworkable one. The latter would go out and fill up with creosote, while the former would stay lit, burn any kind of fuel, and not clog up.

E. B. Weed, formerly of Medina, was the inventor of what is known as the "Weed New Process" for making comb foundation of a very superior kind in large quantities. His automatic machinery, with Washburn's and Howk's improvements for turning out the product, is now used in nearly all civilized countries of the world. This invention almost ought to be classed among the four great inventions—the movable frame, comb foundation, the extractor, and the bee-smoker.

An invention which is now in almost universal use, in this country at least, is that of the late Julius Hoffman, in what is known as the Hoffman self-spacing frame. While the old-style Langstroth non-spacing frame is one that is generally sold, the Hoffman-Langstroth is one that is listed by large and small manufacturers and dealers all over the country. It is an invention that has come to stay. I should say, however, that the present Hoffman frame is not the same as the original Hoffman; or, to put it in another way, the modern Hoffman retains only the self-spacing end-bars of the original, and not the Hoffman top-bar.

Another improvement was suggested by Mr. Francis Danzenbaker; namely, the lock cornering on hives. This feature has now come to be adopted by all modern hive-makers throughout the United States, and, to a great extent, throughout the world. Mr. Danzenbaker was also the inventor of a reversible closed-end frame that is being used by a large number of comb-honey producers.

The invention of the sectional honey-box is not attributable to any one person; however, A. I. Root was the first man to make one holding one pound. His first pound sections were dovetailed all around. Later on came the invention of the one-piece section, on which J. H. Fornerook secured a patent; but after long litigation from one court to another, the Supreme Court finally declared it "null and void for want of novelty." It was shown that one J. Fiddes and a number of others had made and used sections of this kind; so in the matter of one-

piece sections we shall have to divide the honor among four or five different people. Mr. James G. Gray, still of Medina, made the first practical machine for making one-piece sections. Later, machines for turning out section honey-boxes in lots of one hundred thousand a day were the invention of our Mr. George L. Howk.

The Porter bee-escape is one of the best little inventions that have been brought out. It is one of the few patented inventions that survived. It is used very largely by comb-honey producers.

Queen-excluders in the form of perforated zinc and spaced wires are inventions of merit. In connection with these we find entrance-guards and Alley traps that are useful. The Alley trap is another patented invention that survived.

The new steam uncapping-knife is an invention that is coming more and more into use. The Peterson capping-melter for melting cappings as fast as they come from the knife gives promise of being one of the inventions that will last; for it enables a competent man who follows directions to melt his cappings and separate the honey from the cappings immediately; so that when the day's work is done he will have his honey separated from the cappings, and the cappings made into wax ready for use.

Mr. Arthur C. Miller was the discoverer or the inventor of the principle that is now used in all modern foundation-fasteners using a hot plate; yet, strangely enough, not one of these fasteners bears his name. Mr. Miller was also the inventor of two or three different uncapping-machines, and of a steam-heated uncapping-knife. If he had applied for letters-patent on this kind of knife it would have been granted him, and he would be to-day considered the inventor, as he really is, of the steam-heated uncapping-knife.

An invention that gives promise is the Ferguson uncapping-machine. It has been tried in an experimental way, and some of its friends believe it will save a large amount of time over the old way with an uncapping-knife.

Mr. T. F. Bingham and Mr. Hetherington were really the inventors of the modern uncapping-knife popularly known as the Bingham. The Bingham-Hetherington principle is now used in all uncapping-knives, whether steam-heated or plain.

No one seems to have invented the double-walled packed hive for outdoor wintering; but A. I. Root was, perhaps, in connection with Mr. J. H. Townley, the first to apply the principle of chaff packing in double walls. As chaff is not now obtain-

able, other packing material is being used. Langstroth in the early 50's used double hives but not packed.

In the early 80's there were a hoard of inventions relating to feeders, foundation-fasteners, and reversing attachments for movable frames, nearly all of which died a natural death because they were impracticable and only increased the cost of management. When a good brother has been carried away with the invention of a feeder, foundation-fastener, or a scheme for wiring frames, or reversing frames, we almost feel sorry for him—almost as much so as for the man who has invented a new hive which *he thoroughly believes* is going to revolutionize all methods of management. While I do not class all inventors of feeders, fasteners, and hives as belonging to the crowd of ignoramuses, I am compelled to believe that most inventions relating to modern bee culture are not worth the paper that it takes to illustrate and describe them. This seems pretty hard on the average apicultural inventor; but if one will look through the Patent Office and inspect the list of 2000 and more of hive patents and bee-appliances, and then remember that only three or four of these have survived, he will see that my statement is not far from correct.

Among the later hive inventions that have merit is the Aspinwall hive, based on the principle designed to prevent swarming. Whether this will ever come into general use remains to be seen; but its cost of construction, and the large number of extra parts that must be manipulated at intervals, will probably prevent this hive from displacing the standard hives in use to any great extent. The swarming problem is not a serious one in the production of extracted honey; and while probably three-fourths if not four-fifths of all the honey produced in the world is extracted, it will be seen that there will be a very limited demand at best for non-swarming hives.

In the way of minor inventions or improvements, rather, I may mention the omission of porticos on hives; and of bevel edges between the parts of the hives. A hive plain and simple, with a detachable bottom-board and a plain simple cover, is much more workable than some of the complicated affairs of the early days with moth-traps, porticos, etc. It is another improvement to have the hive body and supers of the same dimensions and the same depth, except in the case of half-depth supers, which are really multiples of the full-depth. In a word, the modern improved hive is made up of multiples of parts that will fit

each other in any combination, permitting of any degree of expansion and contraction to accommodate a large or small colony. This feature of interchangeability is prized almost as much as any one single invention, barring only the three great inventions first mentioned.

It might be interesting and perhaps enlightening to some would-be inventors to record here a list of the inventions that have died a natural death for want of patronage. Some of these at the time were widely heralded as revolutionary; but they never "revolutionized," but, on the contrary, sickened and died, as thousands of others had done. It is well that they did.

Perhaps at some future time, when we have more space, it may be interesting and profitable to give a list of these inventions, and explain when, where, and *why* they died.

BEE NOTES FROM CONTINENTAL EUROPE

Sending Honey and Bees by Parcel Post; Carried on in a Large Way in Most Countries of the European Continent

BY R. LINDE

If in matters apicultural some beekeepers over the sea are far ahead of those in the Old World, we have on this side of the ocean some institutions that seem to be far better developed than the same institutions in Uncle Sam's country. I have mainly in view our parcel-post system, the very importance of which, from a purely business standpoint, has long received the very closest consideration of the postal authorities in most of the larger states of continental Europe.

In almost every town, whether large or small, there are markets held once or twice a week for fruit-growers, kitchen gardeners, and farmers. The beekeeper, if he desires to sell his products directly to the consumer, and does not like peddling his honey, must resort to parcel post, and now we could not do without it any more than we could without the letter post.

There is a close similarity between the postal regulations and postal tariffs of most of the larger European states; so it will be sufficient if I give some data of our German postal institutions so far as parcel post is concerned.

It is really astonishing to note what a very large amount of business is carried on solely through parcel post in most countries on this continent. Almost every thing is sent into one's home by it. The post

cashes the bill when delivering the parcel. In nearly every large daily paper you find small advertisements offering to send honey in any quantity direct from the apiary. In most European countries, where protection prevails, food adulteration is carried on extensively, mostly in a refined sense or in a veiled way. Consumers have become very suspicious, and always prefer to buy from the beekeeper direct if they can get in touch with him. Now, that is really possible through parcel post, as the low rates allow even small quantities to be carried without unduly swelling the bill.

If one resides in a locality where little honey is consumed, all he has to do is to advertise in a paper with a wide circulation, in a large town, and he may be sure to get sufficient orders to dispose of all the honey he is likely to produce.

PARCEL-POST CHARGES.

There is a uniform rate for all parcels up to about 11 pounds (5 kilograms). The charge is about 12 cts. for all distances unless the parcel is to be delivered within a radius of about 50 miles, when only half of this amount is charged—namely, 6 cts. If the charge is not prepaid, an additional charge of 2½ cts. is made. Quite apart from this regular charge, a further charge is made for delivering the parcel to your home, which varies somewhat in the different postal districts, and amounts to from 2½ to 3½ cts. In fact, every parcel will be delivered at your home unless you sign a form at the postoffice declaring that you want to take your parcels yourself. In that case no delivery charge is made. This delivery charge, as separated from the general charge, is mostly overlooked—at least not taken into account by the general public when ordering goods offered at a certain price, carriage paid; therefore, while the parcel-post charge is, in many cases, borne by the seller, the delivery charge is always borne by the buyer, tacitly.

If the weight of the parcel exceeds eleven pounds, then an additional charge is made for the overweight in accordance to a zone tariff. For every kilo (2.2 lbs.) the parcel weighs above 11 lbs., an additional charge of 2½ cts. is made if the distance the parcel is to go is below 100 miles; the distance may be up to 250 or 500 miles, in which case this additional charge amounts to 5 and 7½ cts. respectively. The effect of this zone tariff for the overweight above 11 lbs. is to reduce the number of heavy parcels, for the handling of which the post is not especially equipped.

Parcels that exceed a certain measure—for instance, about one yard in length, are

barred from the ordinary rates, and are charged one-half above the ordinary rates. Living animals, as, for instance, bees, are charged the same as barred goods—that is, one-half above the ordinary rates.

This year I got by parcel post all the colonies I bought. A colony of 6 lbs. packed in a box, weighing not more than 5 lbs., would incur a postage of 18 plus 4 cts. delivery charge. In this country it is far cheaper to ship bees by rail, as all our state-owned railways have a special low freight rate for bees, and treat them as express goods. That means that bees are carried on passenger trains or express goods trains. However, the post reaches every small village, whereas the railway does not; so if you don't live close to a railway station it will probably be cheaper to send single lots of bees by parcel post.

For cashing the bill, the post charges $2\frac{1}{2}$ cts. in addition to the postage for the money order that would be required for remitting the amount cashed. The cashing request may be put on a letter, a post card, or a parcel; the charge for presenting this cashing order is always the same, and must be added to the postage of the letter, the post card, or the parcel.

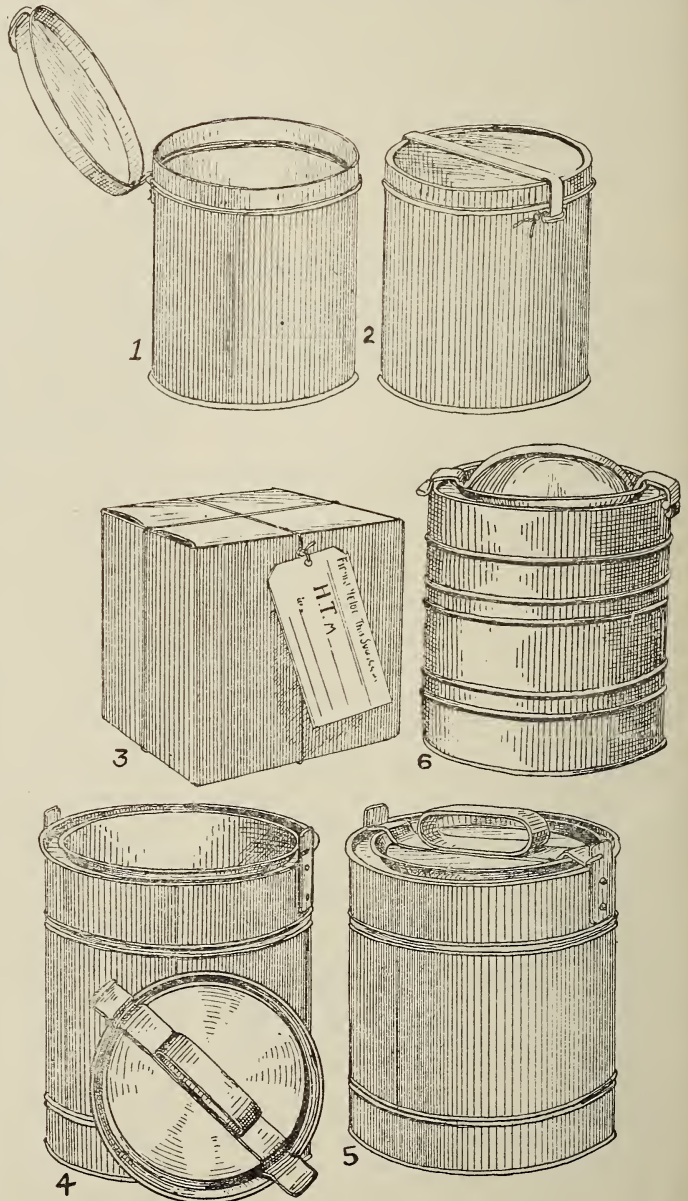
SELLING DIRECT TO CONSUMER BY MEANS OF PARCEL POST.

Let us take an example to make clear what expenses will be incurred by selling directly from producer to consumer by parcel post. In this country, an eleven-pound parcel of good quality honey in a tin package (containing 10 lbs. of honey) is usually offered at \$2.50 post-paid, package included. The parcel-post charge amounts to 12 cts. (or

only 6 cts. if the distance the parcel is to go is within 50 miles). For presenting the bill, the post charges $2\frac{1}{2}$ cts. The money-order postage for \$2.50 would be 5 cts., and for paying the money to the recipient at his home a further charge of 1 ct. is made. The whole transaction would incur an expense of $20\frac{1}{2}$ cts.—that is, about 8.2 per cent of the amount in question.

HONEY-PACKAGES FOR PARCEL POST.

As a consequence of this ease of selling honey by parcel post, special packages have



Different packages used in Europe for sending honey by parcel post.

been put on the market over here. Illustrations of these packages will, I am sure, be of special interest to you just now.

Figs. 1 to 3 show a cheap tin, very extensively used for candied honey. For liquid honey the lid would not be honey-tight. However, it can easily be made perfectly tight by putting thin parchment paper over the mouth of the tin, then pressing the lid on only lightly, and trimming the paper with a sharp-pointed knife. The inside of the edge of the paper that afterward comes in contact with the tin is covered, by means of a small brush, with a thin layer of a molten mixture of beeswax and resin, after which the lid is pressed down firmly.

This tin is put into a box of corrugated paper, as shown in Fig. 3, and is then ready to be posted as a postal card.

For liquid honey the tin shown in Figs. 4 and 5 is far better adapted, being provided with a lever lid that is perfectly air-tight if pressed down properly. I am myself using the tin shown in Fig. 6, which is both simple and effective. The elastic iron bow pressed over the lid and secured to the body of the tin (on one side by means of a spring, the ends of which ought to be sealed with lead or sealingwax) serves as a carrying handle. I find that this kind of package travels better without any envelop of corrugated paper; because the postmen, seeing the tin, and instantly inferring that it contains a liquid (they hardly ever read the labels) don't dare throw it about, but always take it up by the handle. However, the bottom part of this kind of tin has to be made just a trifle stronger than was necessary with the tin shown in Figs. 1 to 3, and the body ought to be strengthened in the way shown in Fig. 6.

These tins usually carry about 10 lbs. of honey, so there remains a margin of one pound. The weight of the tin is a little over half a pound. The whole package comes close to eleven pounds when filled and labeled. There is some demand for tins taking only 5 to 6 lbs. of honey.

I have often wondered how it is that in English-speaking countries there is no parcel post worth speaking about. But they do not have state-owned railways in English-speaking countries. Perhaps in some way the interests of railway companies are affected by parcel post. Anyhow, the interests of railway companies, however powerful they may be, must not be allowed to stand in the way if the interests of the people demand parcel post. And that parcel post is of great help to the beekeeper, whether large or small, the fraternity on

the other side of the ocean will soon know by experience.

From GLEANINGS for Oct. 15, p. 645, I just learned (while writing this article) that parcel post will be an institution in the United States after January 1. It is true there are greater distances to be taken into account in the United States than in the countries on this continent; still, at the rates outlined above, a parcel may travel right through Germany and Austria-Hungary (between these countries there exists a special postal union), a distance equal to that between Florida and Ohio.

Beekeepers across the sea have my best wishes for the thorough success of their new parcel post, which, I am quite sure, will soon be deprived of its provisional character; because, once you have got it, you will soon see that you can't do without it.

Wendhausen b. Hildesheim, Germany.

REMINISCENCES OF BEEKEEPING 50 YEARS AGO

BY A. F. FOSTER

The happenings of a day shape the destiny of a family. It was a chilly November day in 1860. Father and I went six miles on foot for a cow and calf. The paths were sloppy with snow, and we were soon tired chasing through the brush up hill and down. As a slender lad I found the journey tiresome, and about the middle of the afternoon I wanted my dinner.

We came to a large farmhouse with a big barn, and sheds, orchard, garden, and a few hives. Mr. A., an Englishman with whom father had some business, offered us a lunch of bread and butter, milk, and honey. The women were away, but we were made welcome in a warm kitchen, and helped ourselves from the table with its huge loaf, a large pitcher of milk, a pat of fresh butter, and a bowl of yellow grainy basswood honey. The lad of sixteen had a boy's appetite, and this was his first taste of honey. He began with a sup of milk, a slice of bread, and butter and honey. Then some honey on another piece dipped in the cup of sweet creamy milk; then more bread and honey, and then some with silent reflections, "If pa would keep bees we might have honey on our table." Was it a prayer? Surely it was the "soul's sincere desire," and had a prompt answer, for father just then spoke of buying a hive of Mr. A.; and ere we finished the lunch the bargain was made and a box hive was ours.

Later during the summer of 1862 father joined the army of the boys in blue and

left me for nearly three years in charge of a poorly equipped farm, and with the care of a brave gentle mother, and four children younger than myself. The struggle with poverty was a pathetic one. Our brave mother passed away before our father returned; but during that dark period that colony of bees and one other engaged my attention. They had been placed side by side on a low bench in the garret of our stone house just under the roof. Two small openings one foot square answered for open doors through which the bees came and went in a constant stream. As we had no sections or smokers in those days I set about making some boxes to hold the surplus. From some old half-inch basswood siding boxes were made holding about five pounds each. A round hole about the size of a fist was made, and a scrap of glass tacked on the inside through which we could see when the bees began to work upstairs. A scrap of nice honeycomb in the further end led the bees to begin work there; and as the work came nearer the glass we easily determined when the box was finished. Two boxes upon the smaller hive, and three on the larger one, were changed again and again, until about 125 pounds were secured. This was, to our neighbor's thought, a marvelous crop, and yet I could see that my methods could be greatly improved, for a large cluster of bees had hung out all season, and had built combs enough to contain 50 pounds of honey; but later the combs were empty, the honey having been carried into the hive, which was a large one.

About this time I met Edwin France, of Platteville, at the county fair. I related my experience, and he took great pains to explain the management of movable combs, showing me his hive with bees in perfect working order, and imparting to me some of his enthusiasm. Later I visited his home and returned with a hive and colony on nice straight combs, which made the study of bees easy and fascinating. Some years later my brother, Oliver Foster, and I reared from a golden Italian some fine queens and began scientific bee culture at Mt. Vernon, Iowa.

In 1878, while traveling through Ohio visiting relatives, I called on A. I. Root at Medina. Mr. Root was busy in his shop with clocks and watches, but directed me to the back room where some of his helpers were working wax into foundation. Later in the day I called at his home where a lad (Ernest, I think) opened a hive in expert fashion and showed how easily bees may be handled, and made plain many mysteries

of the hive. I presume Editor E. R. Root hardly remembers the part he played in that day's program. This was before Wesley Foster had his name enrolled in the records of the Foster family.

In those early days the spirit of bee culture took a strong hold upon our affections. We had visions by day and dreams by night. We saw moving pictures of swarms in the clouds; hives in the shade; nectar in all the blossoms, and honey in ornamental cakes on the poor man's table. The children never seemed to tire of the business or of its fruits, and to this day we all like it. If there is any thing we like better, I suppose it is the opening of a hive just at the height of a first-class honey-flow to watch the bees do business in a well-equipped modern hive.

Boulder, Col.

[The writer of the above is the father of our department editor from Colorado, Wesley Foster.—Ed.]

THE GREAT ADVANCE THAT HAS BEEN MADE IN 40 YEARS.

Seeing your call for show of hands for the "forty-year GLEANINGS family," I will say I don't know whether I am strictly in the class or not. I do, however, remember when, many years ago, GLEANINGS was the most interesting publication received, and it still keeps up that interest.

I remember when Novice was running his watch-making shop and keeping bees, or talking bees, or both. At that time he had an attack of bee fever, and had the power to transmit it to others.

I remember when the Bucket hive was used and exploited, and think I can remember when there was a pen picture of the wind-power mill shown in GLEANINGS. The enthusiastic Novice had a way of telling his experiences and troubles that was catching and instructive.

For many years copies of GLEANINGS were filed; but when, following Greeley's advice and coming west, the old copies were left; but to-day GLEANINGS is a welcome visitor, though I doubt if as eagerly looked for as in earlier days.

In a reminiscent mood, what wonderful strides have been made in methods and easy manipulation of hives and accessories! The old Simplicity hive answered its purpose, and was good then; but who would want it now? In those days there was no regular or standard size; and if you ordered your supplies at different times there was likely to be a variation of widths, so supers and hives those days and for some years later were not a smooth-fitting lot as now. The old-time honey-box, with its holes for entrance, answered its purpose too, and the honey was just as sweet, and you possibly got more per colony than when the finished section arrived; but after many vicissitudes the old box disappeared, and the commercial product was perfected and beautiful.

Pages could be written in memories of the luscious past and gone up to now; but for the present I will merely hold up my hand and still look and pore over GLEANINGS and keep some blessed tees.

Portland, Ore., Sept. 21. EDWIN J. LADD.

Symposium on Beekeeping 40 Years Ago

A Brief Word from Our Subscribers who were with us in the "Windmill Days" when Gleanings was First Started

Please put me down as a subscriber and reader of GLEANINGS from the start.

Denver, Colo., Nov. 4. J. L. PEABODY.

I have read GLEANINGS, I think, since 1872, and have been keeping bees ever since.

Florin, Pa., Aug. 24. H. H. MYERS.

I have 60 colonies of bees. I am one of those who read GLEANINGS in the windmill days.

Gardiner, Me., Sept. 2. O. L. SAWYER.

I have taken GLEANINGS since 1872. It was when it was printed by means of the windmill, and I don't think I have missed a number.

Shellsburg, Ia., Aug. 23. R. QUINN.

Novice's paper has been in my hands ever since it was published. I have a great many full volumes complete, but not all.

Groton, N. Y., Aug. 30. W. L. COGGSHALL.

I was taking GLEANINGS when it was printed by windmill power, so up goes my hand. I was 73 years old the 2d of this month.

Lemore, Cal., Aug. 20. J. F. FLORY.

I noted in a recent number of GLEANINGS your call for the names of subscribers of forty years ago. This is to inform you that I was among the number.

Altamont, N. Y., Sept. 10. W. D. WRIGHT. ●

I was a subscriber to GLEANINGS back in the windmill days. I still keep about 25 colonies of bees, and still read GLEANINGS, but more for the Home papers than for bee culture.

Elm Grove, W. Va., June 24. WM. BITZER.

I am one of the 40-year subscribers. GLEANINGS was then a small pamphlet of two or four leaves, may be. I have always had bees. For many years I kept about 100 colonies.

Bangor, Pa., Aug. 23. JOHN H. JOHNSON.

Some time ago you asked for the names of those who had taken GLEANINGS longest. I have now read GLEANINGS from the first number, which appeared on January 1, 1873, and have the complete set of volumes to date.

Taunton, Eng., Dec. 6. THOS. WM. COWAN.

I am one of your windmill men. I was in Medina two or three times after some bee supplies. I have taken GLEANINGS most of the time, and I think I got more good out of it than any other paper. I am over 75 years old.

Cleveland, O., Aug. 22. H. C. GREEN.

I have taken GLEANINGS from the beginning, having found my first swarm of bees when a boy about 45 years ago. I found it hanging on an oak when I went after the cows. I have kept bees ever since. I am working three yards of about 250 colonies. I have on the hives now about 3000 lbs. of honey. I am 64 years old. I had in one season 10,000 pounds.

Amity, Orange Co., N. Y., Aug. 26. J. W. UTTER.

Noticing your request for the names of those who were subscribers to GLEANINGS in its windmill days, you may count me in, as I've read it ever since its first days.

Otsego, Mich., Aug. 24. O. H. TOWNSEND.

Replying to the call for those who were subscribers 40 years ago, put my name down. I have received every issue of GLEANINGS as soon as out, and have the entire collection.

Hamilton, Ill., Sept. 2. C. P. DADANT.

I am one of your subscribers who began reading GLEANINGS, Vol. I., No. 1, and the writings of A. I. Root in the *American Bee Journal* in the sixties. I bought my first colony in a box hive in 1863 or 1864.

Lewiston, Me., Aug. 22. HORACE LIBBY.

I am one of those who have read GLEANINGS since its first issue. I don't know that I have missed a single number in all that time. I also read the letters of "Novice" in the old *American Bee Journal*.

Derby, Tex., Aug. 22. I. A. KING.

I commenced taking GLEANINGS with the first issue, when published by windmill power; and, with the exception of one or two years in the eighties, I have been taking it continually from the first year of its publication.

Farmington, Pa., Sept. 5. W. L. KEMP.

I think I must have been a subscriber to GLEANINGS for about forty years, for I believe I have received every number from the very first, when it pushed itself out into the great bustling world, scarcely knowing whether to live or die.

Middlebury, Vt. J. E. CRANE.

I commenced taking GLEANINGS 32 years ago, and have been taking it ever since, except two or three years when I first came to Colorado, as I did think, from first impressions, that a bee would starve here. I soon found my mistake, and went into the business again.

La Junta, Colo., Oct. 21. H. S. SHULL.

I commenced reading GLEANINGS in 1872, and have been a subscriber ever since unless, possibly, I missed one year. I do not take the interest in bees I did when I first subscribed, but take it for the Home papers. I hope you, Terry, and C. C. Miller may live to see your centennial.

Monmouth, Ill., Sept. 26. J. H. REED.

In your editorial of Aug. 15 you ask for a show of hands of those who were subscribers to GLEANINGS 40 years ago. I think I can hold up my hand, for I received GLEANINGS from its first number until the present time, and handle bees and raise a few queens.

Council Bluffs, Ia., Aug. 19. EDW. KRETCHMER.

You may place my name on the 40-year list (old windmill times); and, besides all that, I believe I have all the articles written by A. I. Root as "Novice" in the old *American Bee Journal* in Samuel Wagner times. I well remember those days when GLEANINGS was started—I think four copies the

first year, and since I have looked for their appearance with much regularity, and they have always been very welcome. May GLEANINGS live another 40 years, and for those to come after.

Oswego, N. Y., Aug. 25. F. H. CYRENIUS.

I was one of your subscribers, or nearly so, of 40 years ago. My postoffice at that time was Flat Ridge, Ohio. I have never missed a number since, and have never lost my enthusiasm yet for both the bees and for GLEANINGS. I wish you all long life and prosperity.

Larned, Kans., Aug. 20. A. H. DUFF.

I believe I have taken GLEANINGS all of the time since its beginning—surely back into the time it was printed by windmill power. I am still in the bee business, having bees in three yards here, in the Catskill Mountains, and also in Colorado; but I am not giving them very much of my own personal attention.

Windham, N. Y., Aug. 23. O. R. COE.

I subscribed for GLEANINGS during the first volume, and have been taking it ever since, and I feel proud of it. I shall be 72 years old in a few days, and I am in hopes the proprietor may live to see his one hundred. I have kept bees ever since I commenced taking the journal, and expect to as long as I live.

Noah, Miss., Aug. 31. A. COX.

I commenced to keep bees in 1858, and have been at it since that time. But I feel that it is about time to drop some of it. I go to Florida winters, and I have a few colonies of bees down there which furnish us with a fine grade of honey. I am 64 years old; my health is good, so I think that I can care for bees for ten or fifteen years or more.

Groton, N. Y., Sept. 25. DAVID H. COGGSHALL.

I have not taken your magazine quite as long as 40 years, but long enough to hold up one hand, at least, for I have, with the exception of three or four years, been a reader and subscriber to your magazine for 39 years, and still enjoy it fully as well as ever, especially Conversations with Doolittle and the Home talks, along with lots of other good things with which the magazine is filled twice a month.

Auburn, Me., Aug. 24. MRS. ELLA STOCKMAN.

I read GLEANINGS in windmill days, when you printed the pages diagonally, when you had trouble because the wind did not blow until dark, then came with a rush. We have taken GLEANINGS ever since when we were settled. We sent you subscribers from Missouri, Oregon, and Washington. We could not keep bees without it.

MRS. JESSIE W. THORNTON.

North Yakima, Wash., Oct. 11.

I have taken GLEANINGS from the first issue, and have had a few bees ever since, and would not like to discontinue as long as I live. I shall be 76 if I live till Jan. 30, 1913. I have always liked Mr. A. I. Root's Home department. I think his talks are very uplifting. His temperance talks are to the point. I also like his gardening and his poultry articles. May he live long and continue to prosper.

Maria, Pa., Nov. 8. SAMUEL KEAG.

I read GLEANINGS when it contained only a few leaves. They were placed inside of the *American Bee Journal* that I took. I was then keeping bees in California. I have read GLEANINGS and kept bees ever since, with the exception of eight years,

when I lived in Dakota. I shall be 88 years old next month. I was born in Germany in 1824, and have lived in the United States since 1829.

Nerstrand, Minn., Aug. 22. J. BECKLEY.

I have been looking for that list of gray heads in the honey business in the 70's. I count myself one of them. I think it was in 1872 that I purchased my first swarm of bees in a box hive, and subscribed for GLEANINGS when it first came out. I remember very well the windmill days. I expect to engage quite extensively in the business here, as it is the best location I have found yet.

Ulysses, Pa., Sept. 17. GEORGE A. WALRATH.

We have read your paper since about the first year it started, and have been a subscriber nearly every year of its publication. You signed yourself "Novice" then. The American beehive was about the only hive used, as well as the Peabody honey-extractor. We have a portion of this same old machine yet. We still keep bees, but we have injured our bee business by dabbling in other pursuits.

Plattsburgh, Neb., Aug. 26. J. M. YOUNG.

I note your request in editorial, Aug. 15, for a show of hands of those who took GLEANINGS in the "windmill" days. If you have the old subscription lists you will find my name in Vol. I., No. 1. Then I missed a few months, possibly a year, and have taken GLEANINGS ever since. I still keep bees. My brother and I have 100 colonies now. I am now 59 years old, so you see that I was quite young when I first subscribed for GLEANINGS.

Ballston Spa, N. Y., Aug. 22. J. I. PARENT.

I don't know but I am a forty-year subscriber. My brother and I ran a shop here in 1870. We had a planer and all kinds of saws. We made a lot of Mr. Gould's hives. Along in the 70's I took GLEANINGS. I gave away a good many copies of GLEANINGS to men who got the Gould hives. Mr. Gould sold farm rights to farmers to make and use. We kept from 25 to 50 on hand all the time.

GEORGE RICHARDS.

Harpersville, N. Y., Aug. 26.

[See copy of old bee-hive contract on another page.—Ed.]

I read with much interest your editorial, "GLEANINGS in the Windmill Days," and I wish to state that I have been a subscriber since its first year of publication. More than that, I have every volume bound, and prize them more than any works in my library. I am a five-year subscriber to GLEANINGS, and it is about the only journal that I have the time to read. I was first interested in GLEANINGS through the Home talks by A. I. Root, and have been in the honey business ever since.

Denver, Col., Aug. 22. J. CHARLES FRISBEE.

I have read GLEANINGS most of the time since its first issue, and my beekeeping antedates that time some years. My first bees were purchased June 12, 1858, and I have been in the business more or less ever since. I met A. I. Root at the first annual meeting of North American Beekeepers' Association, held at Cleveland, O., Dec. 6-8, 1871, which was presided over by the late M. Quinby. I have before me the first volume of the *American Bee Journal*, published in 1861; and according to my recollection it is the first publication of its kind attempted in this country. How things have changed since then!

Hendersonville, N. C., Aug. 26. SAMUEL RAU.

I was more than pleased to read your plan for 1913 for the dear old GLEANINGS. I have taken it continuously since it was published as a quarterly, and I can not recall now ever having missed a single number. What a record!

You will remember that, years ago, Stachelhausen and myself were the first to bring out "shook" swarming. Well, we still practice it—couldn't run 1000 colonies for comb honey without the plan, with three people.

Hyrum, Utah, Dec. 12.

M. A. GILL.

I have just noticed in GLEANINGS a call for the old members of the GLEANINGS family to hold up their hands and say "here." I have been a continuous subscriber ever since the windmill days, never having missed a number. For the last five years I have kept no bees; but the fever is still in the blood, and I am keeping posted in the business, and expect, if life and health are spared, to have a nice little apiary in a good location in this, the fairest and best part of God's green footstool.

Ontario, Cal., Sept. 19. J. V. CALDWELL.

I received your notice as to the expiration of my subscription to GLEANINGS. I will renew in a few days. I noticed that you called for the names of the old subscribers to GLEANINGS. I commenced to take it about the first it was sent out. If I remember rightly, it was only a folder of two leaves. I was taking the *American Bee Journal* at that time, edited by Samuel Wagner at Washington. I think it was H. A. King who accused "Uncle Amos" of "shooting poisoned arrows in the dark" because he signed his name "Novice."

Attica, O., Dec. 16.

J. E. ENNIS.

In GLEANINGS for Aug. 15 I see you think it would be interesting to know how many subscribers were left after 40 years, and I think I may claim to have been with you 40 years ago, though I am not certain. At any rate I had dealings with you 34 years ago, and in 1887 I spent a day at Medina, and A. I. Root was digging a well there, I think for a windmill. I know I went about with him for a part of the day. I have no recollection of E. R. Root, though I think I saw him. I am glad to see the advances made in the buildings and management of what has grown from comparatively small beginnings.

ALFRED J. CLARKE.

Longwood House, Oxford, Eng., Oct. 3.

For a holdup of hands for the windmill days, mine is up. Though a school boy in my teens, I got the bee fever while on my father's Virginia plantation; swapped a watch for a bee-tree, and have kept bees and taken GLEANINGS, practically continuously, for more than thirty years.

Well do I remember those early writings of A. I. Root, the windmill power, Merrybanks and his Neighbor, and Blue Eyes and the rest. Specially was I impressed with the moral and religious tone of the Home papers; and it made a good impression on my young life. His conduct of the Sunday-school, family prayers, and religious services in the workshop show a strong character in the right place.

Washington, D. C., Sept. 2. F. P. NASH.

I have not taken GLEANINGS for 40 years, but made its acquaintance in the year of 1878, when I became so interested in it that I procured almost all of the back numbers, and I think I have had and read almost every copy that was ever printed.

It was in GLEANINGS that I first read the A B C; but I have had many copies since that time—had to, to keep up with the times. I hope to have and read every number that is printed as long as

I live, although it is possible that I shall not be able to see to read them myself. If so, I have good children to read them to me. I hope that GLEANINGS will live as long as the world stands, as a monument to its founder, whose writings I have enjoyed so many years.

CHARLES W. PHELPS.

Binghamton, N. Y., Aug. 29.

The undersigned commenced beekeeping in 1860 or '61 in Murfreesboro, Tennessee, and during the Civil war, or soon after, he subscribed for the *American Bee Journal*, published in Washington, D. C., edited by Samuel Wagner. A. I. Root was an interesting correspondent of that journal, writing under the *nom de plume* of Novice long before he published GLEANINGS, which was a very modest publication compared with GLEANINGS of the present day. Your books will probably show that I was a subscriber 40 years ago.

Quincy, Langstroth, Wagner, Alley, Hamlin, King, and many others, not now recollected, beekeepers and authors of that day, have passed away. I came to Florida in 1893, and still keep a few bees. Tampa, Fla., Aug. 25. W. P. HENDERSON.

I am one of the number who took GLEANINGS in the good old windmill times, and I think I have all of the numbers that were ever printed. While I have not kept as many bees as some, I believe I have had some all of the time except one year, GLEANINGS has always been a very desirable and helpful paper, and somehow I always find the Home department very good.

There, now, as my mind runs over the last 40 years there seems to be a sort of sadness in my heart to think I have made so many failures in my Christian life. However, I am glad I have made an effort to live in the world to come. How I should like to grasp your hand for old and continued friendship! and may we meet beyond this vale of tears.

Dexter, Maine, Aug. 20.

A. R. BODGE.

A TON OF HONEY FROM SIX COLONIES.

I believe that I became a subscriber to GLEANINGS in its early days. I was living then at Lewisville, Pa., and was a beginner in beekeeping. I removed from Lewisville to Oxford, Pa., and continued the care of an apiary, importing Carniolan queens and advertising Carniolan queens for sale, and mailing many hundreds to all portions of the United States. I disposed of my apiary in 1890 and removed to Colorado Springs. From there I removed to this place in 1899, and again secured an apiary of Carniolans which have carried in for my disposal an average of 200 pounds per colony annually. One year, with a hundred acres of alfalfa on my ranch, six colonies gave me one ton of honey. I am still an interested reader of GLEANINGS, particularly Our Homes.

S. W. MORRISON, M. D.

Oxford, Colorado, August 23.

THE SHEEP AND WOOL INDUSTRY AN ADJUNCT TO BEE CULTURE.

I have been a continuous subscriber to the *American Bee Journal* since early in the '60's; and have also been a continuous subscriber to GLEANINGS. I have been a beekeeper continuously for 49 years; have seen a great many changes in the business in that time. The seasons in the earlier years were good; now they are practically a failure. When the sheep industry left our community, the white clover left. That was our dependence for surplus honey. Are not my conclusions correct? Is there anybody who can report abundant crops of white clover

where there are no sheep kept in the vicinity of said crops of clover? Is there any possibility of the white clover ever returning again without the return of the sheep? I think not. If there is anybody else who can produce any evidence to the contrary I should be pleased to hear from him through GLEANINGS. I feel considerably interested.

ALFRED J. FISHER.

East Liverpool, Ohio, Dec. 12.

Forty years ago I was a boy of six, and am not able to remember accurately just when the first number of the magazine came to our house; but I am pretty sure it began with the first number published. At least it was when GLEANINGS was a baby, and from that time until the present we have never missed a number. As soon as I was old enough I went into the business with my father; and at his death, eleven years ago, I had the subscription transferred to myself. "Uncle Amos" is a household word with us. We would feel as much lost without the visits of our bee paper twice a month as we would without our bees. Our children have been brought up on bread and honey, and are a healthy pair of young people, and a credit to the diet.

While not exactly one of the original subscribers myself, you see I was brought up right with the magazine, and hardly know where to draw the line, especially as the change was so slight from my father, C. H. Longstreet, to your present subscriber and friend—

Coronado, Fla., Sept. 9. H. C. LONGSTREET.

I have subscribed for GLEANINGS ever since the first number was published, when the windmill furnished the power, and when "Novice" made some of his engravings with a saw. Before me lies Vol. 2, No. 1, headed:

"Novice's GLEANINGS IN BEE CULTURE; or, how to Realize the Most Money with the Smallest Expenditure of Capital and Labor in the Care of Bees, Rationally Considered. Published Quarterly. Medina, O., Jan. 1, 1873."

I have every number published since then, and it has been one of the chief pleasures of my beekeeping life to read and study GLEANINGS.

On Dec. 30, 1898, when GLEANINGS was 25 years old, A. I. Root presented me with a glass dodecahedron, which still adorns my writing-desk.

I may say that I have been a constant subscriber to the *American Bee Journal* since the beginning of 1871, and therefore used to read and enjoy "Novice's" articles in that paper before GLEANINGS was born. May he continue for many years yet to instruct and cheer those who have known him so long.

MUTH-RASMUSSEN.

Independence, Inyo Co., Cal., Aug. 26.

I took GLEANINGS for many years when first published. I was then living in Brookfield, N. H. I moved to Boston, and dropped beekeeping for 16 years. I moved here three years ago, and had bees again within a week. I have had bees upward of 35 years. I never knew a year but that I had more or less comb honey. Our great flow in Woburn is in August and September.

With a protected hive having a cap covering all the supers, a queen that will keep ten frames practically full of brood all the time so the hive is boiling over with bees, I have never failed to get honey. Sooner or later there will be a flow, and ten pounds a day is nothing for such a colony. I have had as high as seven from goldenrod in September in New Hampshire. Massachusetts is an old settled country; and if the editor lived here he would write some very different articles. Shrubbery and hedges like

sumac and clematis and many others cut a big figure. Our town raises more squashes than any other in Massachusetts, and lots of beautiful honey comes from them. There are not a dozen basswood trees in town, and only goldenrod enough to tinge the clematis (cultivated, not wild). Creeping Jenny grows everywhere, a great yielder of fine white honey. My best colony last year gave 70 lbs. in August and September in sections, and according to appearances now it will beat it this year.

Woburn, Mass., Aug. 30.

E. C. NEWELL.

I am only a boy over 60 years old; but I kept bees when I was 17. The first bee book I ever read was an old one my father had—The *American Beekeepers' Manual*, written by T. B. Miner in 1849. It marked the change from the straw and log gum to a square box with a small box on top. The next after that was a book written by Moses Quinby, I think; but my start in beekeeping was due to a neighbor who sold his place and wanted me to take his bees on shares. I think there were 14 colonies. The hives were 14 inches wide, 14 inches deep, and about 20 inches long. The whole back was a door. The bees' part was 12 by 12 inches square, with glass in the back. On top of that were placed two boxes, 6 by 6, and 12 inches long, with glass in the end, all home-made; and I still have two hives, with no bees in them, that I made in 1879.

I knew of Mr. A. I. Root 40 years ago, and I think I also read GLEANINGS from the first.

I have never been a big bee-man, nor kept bees all the time, as I have sometimes been where I could not; but whenever I could I had them, and now I have nine colonies in our back yard in the city of Hudson, and I love the little scamps as well or better now than I did 40 years ago; and I remember as a boy I used to love to take a book or paper and sit among the hives, and read, and hear the bees hum. It was music; and how I used to watch them pile in ahead of a shower!

Hudson, N. Y., Sept. 1.

H. C. NIVER.

I am not certain, but I think I read GLEANINGS from nearly if not quite at the start, as I had the old *American Bee Journal* when published by Samuel Wagner, Washington, D. C., and A. I. Root wrote for it under the name of "Novice;" and those pieces written by him were the first looked for. I have been a subscriber a large part of the time since GLEANINGS has been in existence, and have kept bees since June 22, 1856. I have 19 colonies at present, and have had Italian queens from different breeders. I introduced two queens this year from a breeder who advertised four and six banded bees; but the first queen produced very fine three-banded ones, and it is not quite time yet for eggs to hatch from the second one.

This section is not very much of a honey country; 80 to 90 lbs. is as much as I have ever taken in surplus of honey in any year. In all the 56 years I have kept bees, 500 lbs. is as much as I have taken in comb and extracted honey in any season from 12 to 15 colonies, spring count. I have always been able to sell all my honey at home, as people knew for quite a distance that they could nearly always find honey, either comb or extracted. I usually get from 20 to 25 cents per lb. for comb honey, and 20 for extracted honey put up in jelly-tumblers.

One thing more. I am a believer that queens mate two to five miles, quite often, from home, as no one less than five miles from my farm has ever introduced any Italian queens; and bees in three different yards, 1½ to 2½ miles apart have become mixed with Italian blood. If not from drones from my small apiary, how then?

GEORGE S. WHEELER.

New Ipswich, N. H., Sept. 25.

Our Homes

A. I. ROOT

Blessed are they which do hunger and thirst after righteousness, for they shall be filled.—MATT. 5:6.
And in his law doth he meditate day and night.—PSALM 1:2.

Oh how I love thy law! it is my meditation all the day.—PSALM 119:97.

Dear friends, our Medina people have asked me to dictate a Home paper concerning the way in which GLEANINGS was started forty years ago, to go along with these letters of those who have taken GLEANINGS forty years or more, as given in this issue. May God help me to deserve better the many kind words that have come in these letters from so many of the old veterans. The names as I glance over them seem so familiar it is hard for me to realize that forty years have passed since I first became acquainted with the writers. I should like to send a kind message to each one personally if the space permitted.

I have before remarked, that all through my life I have greatly enjoyed the work of hunting up God's gifts; and I believe I speak truly when I say that I enjoy even more passing these gifts along to others. Some of you may think strange to notice the beautiful texts which I have chosen to head this short autobiography. Now, while I agree that the main purpose and meaning of these texts applies to spiritual things, yet I also feel that they may apply to our daily life, and to the industry in which we are engaged. If our industry and occupation are for the benefit of humanity, we are indirectly seeking the kingdom of God and his righteousness; and we have a right to appropriate these beautiful texts to the lives we are living and to the calling we are following.

I have told you in the preface to the A B C book how it was that my attention was first started toward bee culture. When my father moved on to the old farm in Medina County, when I was about twelve years old, I was much interested in gardening, especially in studying the catalogs and testing the new fruits, seeds, etc. Finally I subscribed for and read with great attention a little periodical called the *Northern Farmer*. It was edited by T. B. Miner. One of the writers in this issue refers to Miner and his book on bees. I think I got the book and was planning to get some bees; but for different reasons it was put off until some years after my marriage and I had a home of my own. The A B C book tells you briefly what happened at that time. After the truant swarm of bees was captured, and I had begun to make them my study, in my ignorance in regard to their management

they soon swarmed out; but my enthusiasm was so much aroused it was not to be stopped by this occurrence. I found a neighbor about half a mile away who consented to sell me an old box hive. With some ropes it was hung on a pole one night after dark, and a kind friend assisted me in carrying it about half a mile to my own home, where it was placed in the loft of the woodhouse. To make sure, I was up before daylight and watching to see the first bee make his appearance and start off. I rather think it took some calling to get me to come to breakfast, because I was anxious to see the first bee return with a load of pollen or honey. From that time forward bees were a craze with me. I was at the time a watchmaker and jeweler; but every old farmer who came into my place who knew any thing of bees or had ever kept bees was pumped until he was, I fear, sometimes glad to get away. I borrowed (and later subscribed for) about all the farm papers published at the time, in order to find out all I could about bees and bee culture. The *American Agriculturist*, by the Orange Judd Company, was then my particular reference. I made an early trip to the city of Cleveland, and carefully looked over all the books and every thing else they had in regard to bees. I think that it was exceedingly providential that I got hold of and chose "Langstroth on the Honeybee." I soon found that Langstroth was still alive, and through him got in touch with Samuel Wagner. I learned that the *American Bee Journal* that had been published for two years was stopped on account of the war. After some correspondence with friend Wagner I got him to recommence the publication, promising to write for it regularly. Several of the friends in the above letters allude to these letters written under the *nom de plume* "Novice."

In my search for knowledge in regard to bee culture I soon ran against certain patent-hive men. I visited A. J. King at his factory in Nevada, Ohio, and bought an individual right and took the agency for the American hive. When I afterward suggested to the *American Bee Journal* that King's American hive was an improvement on the Langstroth hive, my good friend Wagner took me to task, explaining why movable frames were better than frames at fixed distances.

Later on, under the signature of "Novice," I attacked various patent hives, showed up their defects, and why they were

greatly inferior to the Langstroth hive; and, among other things, I advised against the use of the American hive in place of Langstroth's. Mr. King at this time in his journal, *The Beekeepers' Magazine*, accused* me of "shooting poisoned arrows in the dark" because I didn't sign my full name, A. I. Root, to my communications.

I soon got track of Italian bees, and found the only queen that was to be purchased so late in the season (for it was then along in the fall) was one in the possession of L. L. Langstroth, for which he wanted \$20.00. I told you in my A B C book how I sent off my \$20.00 and watched anxiously for the bee. Of course I became the laughing-stock of friends and neighbors for paying \$20.00 for a single bug; but later on, when I secured a barrel of honey from one single colony of Italian bees in one summer, people who criticised concluded there must be method in my madness after all.

Of course, my success was written up in the *American Bee Journal* as well as in our Medina paper. Interest in bee culture started up there and then.

Let us take up my first text right here. While it can not be said that I was literally hungering and thirsting after righteousness, I was in reality hungering and thirsting to know more about bee culture. It was my study and my theme day and night. Not only were books and papers read, but an observatory hive was placed in the window where I slept, and I spent a great part of every night in watching them by lamplight. I saw the queen-cells built, saw the queen emerge from her cell, saw her take her wedding-flight, witnessed her return, with the evidence of impregnation, and none but those who have passed through a similar experience can realize with what joyous enthusiasm I verified the statements in 'he books. I began to get a library of all the books published that I could get hold of—not only standard works but those put out by patent-hive venders. I soon commenced the task of sifting the wheat from the chaff. I can not recollect now that I had any particular desire to 'benefit humanity, though I improved bee culture. This is true, however: I have all my life, I believe, been against any sort of work or system to defraud humanity, especially the honest till-

ers of the soil. When I saw what was being done in the way of patent hives, I proceeded to investigate and protect the honest people who had no money to spare where there was no need of sparing it. At the time the war broke out, I was manufacturing silver jewelry, and had quite a number of hands in my employ. I collected my agricultural books and papers and set a clerk to work to hunting up the addresses of as many people as she could find that were interested in bee culture. After having read of the German honey-extractor, and seeing a rude cut of one, I set about making one, and the barrel of honey that I secured from a single hive in a single season was by the use of this old metal honey-extractor. When I saw what the Italian bees might do I said, "Friends, the time is coming when honey will be on sale (like butter and eggs), not only at every corner grocery, but every day in the year." I have lived to see this almost verified; and with our new parcel post it may be more than verified.

It soon became necessary for me to have a printed list of the things in regard to bee culture that I had for sale, and new editions of this price list were needed so frequently that I finally decided, in order to save an endless correspondence, I would have to get out a quarterly bee journal. The first number was accordingly sent out to as many addresses as I could collect in the way which I have indicated. I believe it was also advertised in the *American Bee Journal*, the journal I had been writing for, for a year or more past. The price of the quarterly was to be 25 cts. per year; but it was almost immediately received with such enthusiasm that I changed it to a monthly at 75 cts. per year, almost before the second number. Since then the growth has been steadily upward. It is still growing now in its 41st year. I believe there has never been a time or a year in which the subscription for any one year was less than it had been for the year before. I visited Mr. Langstroth in those early days, and he paid frequent visits to our place in Medina; and many were the long talks and pleasant hours that we spent together.

Let me digress a little right here. My old mother used to make visits frequently at our home and look over my bee-books and the bees, and listen to my talks on bee culture. While she was not particularly interested in bee culture, she was always from first to last deeply interested and full of enthusiasm in seeking the kingdom of God and his righteousness.

Let me go back still further in my story. When I was two or three years old, and

* In later years this same Mr. King, overlooking or forgetting the past, possibly seeing that A. I. Root's judgment concerning the relative merits of the two kinds of hives was correct, wrote my father a very kind and appreciative letter. The verdict of later years was and has been, unquestionably, in favor of the Langstroth frame and hive, while the King hive and frame have been all but forgotten. The King frame was almost immovable after it was well glued up with propolis.—E. R. R.

my parents lived in the old log house out in the woods on the farm, one cold frosty morning, when there was a little snow on the ground, father and some of the neighbors were planning to brimstone a hive of bees to get the honey. I asked a number of questions that no one could answer, and my curiosity was so great that, although told I must not even look outdoors because I had been suffering from a severe cold, I finally escaped the attention of mother and the rest, pushed through the partly opened door, and got out into the crowd around the beehive before anybody noticed it. Child-like, I slipped down and got my hands in the snow. They took me indoors and warmed me before the open fireplace. Notwithstanding all their care, I contracted lung fever, which came so near taking my life that the doctors gave me up. My good mother didn't give me up, however, even if the doctors did. She kept on doing every thing she knew how, and praying that the little life might be spared. Some one inquired afterward what doctor it was that brought me out of that low spell. The Christian doctor, however, replied that no doctor did it; it was my praying mother who saved my life.

Now to go back. When my mother used to see me so engaged with my books on bees that I could not drop them, even day or night, she used to say something like this: "Amos, the time is coming when you will read your Bible with as much enthusiasm and interest as you are now reading these books on bees." I laughingly made some sort of reply; but later on, as these older readers of GLEANINGS will remember, I dragged my "religion into an industrial journal," as some expressed it. Some good business men and even church members smiled at my unusual proceeding. But I, believing that I was under the influence of the Holy Spirit, wisely kept quiet, and kept on in my course, as you will see if I relate one little incident.

A large business firm in the East made a mistake and sent me a consignment of goods which I didn't order, which would be rather expensive to return. After some correspondence I told them that, in order to save them expense, I would try to work off the goods. I did this by putting them on the fairground in the counter-store business that was my hobby for a time. When I informed them the goods were all sold, and enclosed check, there came a reply something like this: "Mr. Root, we will confess that we were prejudiced against you. We were told that you were a religious crank, and had the habit of mixing

religion and business. Now, if this is the way you propose to mix religion and business, bring it along; the more of it the better; it is *exactly* what the world is suffering for."

One reason why GLEANINGS has prospered is, I think, that it has always set its face so determinedly against selling secrets and frauds. I have been all my life more or less in touch with the experiment stations, not only in Ohio, but others, and they have repeatedly said that no good thing ever came to science or art or industries through a secret sold for a certain sum of money. Our Ohio experiment station is very decided in regard to this point. Yet at the present time we are told by the papers that millions of hard-earned money have been going and are going constantly to fakers who make it their business to rob people of their hard-earned money, especially sick people. Now, GLEANINGS has from first to last endeavored to protect people from frauds of this sort. Any advertisement that is sent in of this kind, it has been my custom for years to ask for sample of what they had to sell for a certain sum of money. Many refuse to do this, thinking it is, perhaps, none of our business.

In order to succeed in any business at this present day and stage of the world's industry, it is almost a necessity that you be "hungering and thirsting" for every thing that is to be known about the business you are engaged in. Better still—yes, ever so much better—you should be *hungering and thirsting after righteousness*. I believe one of the hopeful things that we can thank God for at the present time is that the whole wide world is more and more *hungering and thirsting after righteousness* instead of *hungering and thirsting for opportunities* to get a hand into some other man's pocket without his knowing it. The most pressing need of the present day and age of the world is for men for important offices who are *hungering and thirsting after righteousness*, instead of *hungering and thirsting for an opportunity of defrauding the people whom they have sworn to protect*.

It is true that, during the past forty years, there have been various jangles and disagreements and difference of opinion; but, may the Lord be praised, they have been finally settled, almost without exception, in a peaceable and amicable manner.

The fashion of filling the pages of a bee journal with accounts of quarrels and disputes, instead of having the pages devoted to the dissemination of useful and helpful knowledge, has, for the most part, passed

by, and I thank God for it. Editors of bee journals of the present day seem to be on most friendly terms, and ready to lend a helping hand whenever it may be required. It has been frequently remarked, and I believe truly, that the beekeepers of our land occupy a higher standard of morals than those engaged in almost any other occupation.

THE AMERICAN TOBACCO CO. AND THE CRUSADE AGAINST INTRODUCING CIGARETTES INTO CHINA.

We clip the following from the *Union Signal*. It is a letter from Mrs. Chauncey Goodrich, President of the China W. C. T. U.:

Up to the year 1900 many men and women were given to smoking tobacco, though as the bowl of the ordinary pipe in use was so very small the evil effect was slight; but since 1900 tobacco companies have awakened to the idea that China is an excellent field for the sale of cigarettes, and have left no stone unturned to introduce them into the country. Their agents have gone into the most remote places of the most distant provinces, as well as those provinces bordering on the coast. The walls of cities, villages, and even hamlets are covered with large flaming posters telling of the great value of the cigarette in *banishing fatigue*, awakening an appetite, and also relieving phlegm gathering in the throat in the morning—thus making one feel generally happy and able to accomplish more work. Pictures of women are, in some cases, placed in the boxes, while at each stand where cigarettes are sold, large pictures are on view. To introduce the cigarette, officials and others have been presented freely with large boxes of them, and in some cities small boxes have been thrown in at every gateway or store with the hope of creating the habit. The finest printing-press in Shanghai is owned by the American and English Tobacco Company, which last year employed 125 European salesmen, besides countless Chinese. The ease with which the cigarette is carried and smoked has increased its use so greatly that one now sees men, women, and even little children under five, yes, even three years of age, smoking them, and the shaking hand and trembling jaw of the cigarette smoker are very common among young people. This use of the cigarette is day by day undermining the health, affecting the brain, and blighting the morals of the Chinese. The tendency to tubercular trouble, which has carried off more of our brightest pupils in mission schools than has any other disease, makes the frequent use of the cigarette unusually perilous in China. It is with real pain one sees this evil thing taking the place of food in the families of large numbers of working people who can ill afford to forego nourishment. No small effort has been made to inform the people of the extreme harmfulness of the cigarette, and to unite them in a crusade against it. This has been very effective in certain places, notably Foo Chow, where it is said cigarettes have been largely driven from the city. In Peking we have posted on the city walls large posters, 3000 in all, dealing with the nature of nicotine, the effects resulting from its use, and stating what steps different nationalities are taking to prevent the formation of the habit among minors. These posters were prepared on behalf of the W. C. T. U., but the Tract Society printed them and created a sale

for them in many provinces, and also for a folder in different form. More than 30,000 of each were sold or given away in one year. In one city in Shansi, the official thanked the missionary who had the posters placed on the city walls, saying foreigners were too often ready merely to profit from the Chinese, and that they greatly appreciate, therefore, the efforts of those who are seeking to prevent injury to them.

To the above the *Signal* adds:

Friends, does not God call us to be more courageous, to fight—yes, fight—against these gigantic evils of our race and every race that are unfitting men and women to become in body, mind, and soul that which God meant them to become?

LIQUOR, SNAKES, REVOLVERS.

Snakes, intoxicating liquors, and revolvers can not be sent by parcel post. Significant, isn't it! What a combination! How appropriate! The prohibited articles are much alike. Any kind of snake causes the average person to shudder. Few persons want any thing to do with snakes, dead or alive, real or imaginary. There is an affinity between snakes and liquor; and then add revolvers and you have a harmonious trio. Liquor calls for revolvers, and liquor produces snakes. Revolvers, snakes, liquor—these three—but the greatest agency for evil is liquor. Uncle Sam knew his business when he grouped these agencies and forbade them the use of the parcel post.

We clip the above from the *American Issue*, and breathe a hearty amen to every word of it, and also thank God that "Uncle Sam" is, to some extent, waking up.

"UNCLE SAM IS OUR PARTNER."

A circular issued by a mail-order liquor firm bearing the words "Uncle Sam is Our Partner" was displayed in the Senate chamber one day last week by Senator Kenyon as an illustration of the extent to which, he said, the United States was taking part in the violation of local prohibition laws in "dry" States. Congress adjourned, however, without passing the Kenyon-Sheppard bill to prevent the lawless importation of liquor into dry territory. The liquor forces have all along declared that the bill shall not pass. It remains to be seen. If the allied forces of greed and illicit gain and anarchy and beastliness can stand up and defeat law and order and humanity and home, and morals and truth and goodness, and good men and good women and God, they can not continue to do it indefinitely. It is a fallacy and enormity to try to uphold and bulwark the murderous liquor traffic by the approval and sanction of the Government. Every righteous heart knows that it is wrong in the sight of God. A thing that is morally wrong, and that is actual anarchy under the laws of many of our States, can not be made any thing else than an infamy by all the contortions of all the constitutional lawyers, nor by all the threats and bribes of liquor-dealers who wish to have it made legal for them to commit crime.—*Herald and Presbyterian*.

The A. I. Root Co.—

I have just received the book which I ordered from you, "Wax Craft," and have had time to read only a few chapters in it; but I think it will be very helpful to me. I received the A B C of Bee Culture and The Honeybee, by Langstroth and Dadant, all of which I received several days ago, and in connection with my observations I have read them all. I find that they are splendid studies, even for the man with a small apiary. I am a young man, and these books have opened up a new world to me.

Parkersburg, W. Va., Sept. 13. J. L. VINSON.